



THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্তৃত্ব দ্বাৰা প্ৰকাশিত

PUBLISHED BY THE AUTHORITY

নং ৪৪৭ দিশপুৰ, শুক্ৰবাৰ, ৪ অক্টোবৰ, ২০২৪, ১২ আহিন, ১৯৪৬ (শক)

No. 447 Dispur, Friday, 4th October, 2024, 12th Asvina, 1946 (S. E.)

GOVERNMENT OF ASSAM

ORDERS BY THE GOVERNOR

DEPARTMENT OF HOUSING AND URBAN AFFAIRS

NOTIFICATION

The 19th August, 2024

DoHUA EcF No. 450508 / 2024 / 35 – In exercise of the powers conferred by the Sub- Section (2) and (3) of Section 10 of the Assam Town and Country Planning Act, 1959 (as amended) read with Rule 6 of the Assam Town & Country Planning (Publication of Master Plan and Zoning Regulation) Rules, 1962, the Governor of Assam is pleased to publish the following notice regarding the publication of the Final Master Plan for Kampur.

Notice for publication of the Final Master Plan for Kampur

1. It is notified that the Final Master Plan for Kampur is prepared by the Directorate of Town & Country Planning, Government of Assam and adopted by the State Government under sub section (2) and (3) of Section 10 of the Assam Town & Country Planning Act, 1959 (as amended) read with Section 6 of the Assam Town and Country Planning (Amendment) Rule, 1962 for the area described in the schedule below, is hereby published.
2. The Final Master Plan with all relevant papers and maps may be inspected free of cost during the office hours at the office of Director, Town & Country Planning, Dispur, Guwahati-6, Deputy Director, Town & Country Planning, Dist Office – Nagaon, office of the Chairman, Kampur Municipal Board and Kampur Revenue Circle Office. Copies of the Final Master Plan is also available in the office of the Director, Town & Country Planning, Dispur, Guwahati-6 and Deputy Director, Town & Country Planning, Dist Office – Nagaon for sale on payment.

SCHEDULE**A. Situation and area:**

District	: Nagaon
Subdivision	: Nagaon.
State	: Assam.
Master Plan Area	: 37.63 SqKm.
Municipal Board Area	: 6.10 SqKm.

Apart from the Kampur Municipal Board Area, Kampur Master Plan area covers 12 nos. of nearby villages. The villages included in the Final Master Plan for Kampur with Mouza's are as follows:-

SL No.	Revenue Village	Revenue Circle	Mouza	Gaon Panchayat
1	Niz Narikali	Kampur	Jorabari	Bagalajaan G.P
2	Uttar Chang Chaki		Garubat	Changchaki G.P
3	Dakhin Chang Chaki		Garubat	Chang Chaki G.P
4	Majarati		Kampur	Tetelisora G.P
5	Tetelisora Gaon			Teteligsora G.P
6	Tetelisora Grant			Tetelisora G.P
7	Dakhinpat			Deb Narikali G.P
8	Charaihagi			Deb Narikali G.P
9	Ghilani			Deb Narikali G.P
10	Niz Kampur			Niz Kampur
11	Kekuri Bari			Niz Kampur
12	Darangi Gaon			Niz Kampur

B. Description of boundaries:

NORTH :- Kalaikhuwa

SOUTH :- Kachua

EAST :- Kathiatoli

WEST :- Deb Narikali

SL No.	Revenue Village	Revenue Circle	Mouza	Gaon Panchayat
1	Niz Narikali	Kampur	Jorabari	Bagalajaan G.P
2	Uttar Chang Chaki		Garubat	Changchaki G.P
3	Dakhin Chang Chaki		Garubat	Chang Chaki G.P
4	Majarati		Kampur	Tetelisora G.P
5	Tetelisora Gaon			Teteligsora G.P
6	Tetelisora Grant			Tetelisora G.P
7	Dakhinpat			Deb Narikali G.P
8	Charaihagi			Deb Narikali G.P
9	Ghilani			Deb Narikali G.P
10	Niz Kampur			Niz Kampur
11	Kekuri Bari			Niz Kampur
12	Darangi Gaon			Niz Kampur

PABITRA RAM KHAUND,

Secretary to the Government of Assam,
Department of Housing and Urban Affairs.

CHAPTER 1:

INTRODUCTION TO MASTER PLAN AREA

Kampur is a part of Nagaon District in the Central region of Assam. It is situated at a distance of 32 Kms towards south from the District Headquarter Nagaon City and 122 Kms east of the State Capital, Dispur, Assam. It is located on the bank of the Kapili River. Initially Kampur Town Committee was established on 01-04-2002 and the Town Committee was updated to Kampur Municipal Board in the year 2018.

Kampur is located at 26.20°North latitude and 92.63°E longitude. Kampur town is surrounded by Kalaikhuwa on the North, Kachua on the South, Kathiatoli on the East and Deb Narikali on the West. The mighty river Kapili passes through the heart of the town. Kampur is well connected by road, rail and river. Two (2) State Highways – 17 and State Highway -18 passes through the heart of the town. Apart from administrative activities, the town is a centre of education, trade and commerce of the district.

The demarcation of the planning area of Kampur has been made considering the present growth of the town, the physical feature of the surrounding areas, communication network, different type of developmental works already come up in nearby villages and potential for future development of the region. The town has been growing towards Kampur- Kathiatoli Road, Kampur –Nagaon road and Kampur –Raha Road. Some major developments also come along the Kampur-Kathiatoli Road connecting NH-36.

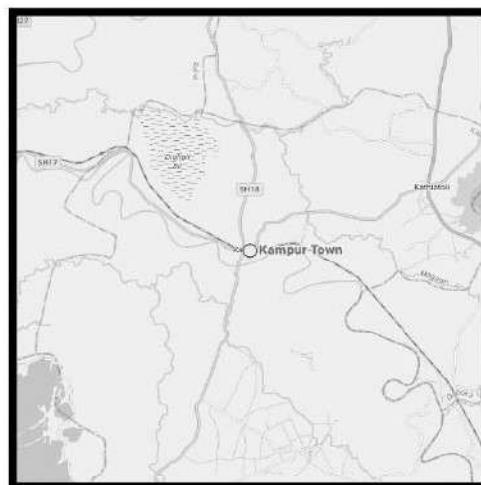
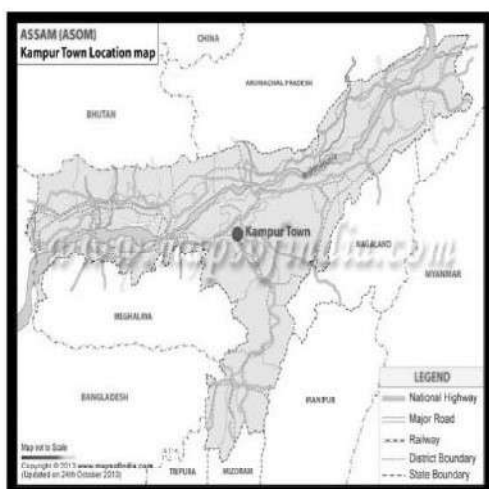
As of 2011 India census, Kampur Municipality Board Area has a population of 10,371 of which 5,230 are males while 5,141 are females.

Before finalization of the planning area, discussions were held with district level officers dealing with developmental works headed by Deputy Commissioner, Nagaon and the elected representative of Kampur Town Committee as well as Hon'ble MLA Barhampur Constituency. The Kampur town area has been growing haphazardly and this has created enormous problems to the habitant of the town. In this context, "Draft Master Plan Kampur 2045 is prepared to guide the physical development of the town with some surrounding villages in future. This plan is prepared, basically a land use plan considering all the urban development aspects, with forecasting all the service up to 2045. By and large, this Master plan has been prepared as per the provision of URBAN DEVELOPMENT PLANS, FORMULATION AND IMPLEMENTATION, GUIDELINES, 1996 prepared by the INSTITUTE OF TOWN PLANNERS, INDIA NEW DELHI under the assistance of the Ministry of Urban Affairs and Employment, Govt. of India, New Delhi and Circular issued by U.D.D (T &CP Wing), Govt. of Assam time to time. Uniform Zoning

Regulations are considered as it is already approved for all the towns of Assam including Kampur Town by the Govt. of Assam.

1.1 LOCATION:

Kampur is a part of Nagaon District in the central region of Assam. It is located at 26.20°North latitude and 92.63°E longitude. Kampur town is surrounded by kalaikhuwa on the North, Kachua on the South, Kathiatoli on the East and Deb Narikali on the West. It is also located on the bank of the Kapili River.



1.2 BRIEF HISTORICAL DEVELOPMENT OF KAMPUR:

Kampur is an important and auspicious place situated at a 32 Km southward away from Nagaon town. The Kapili River flows through the Kampur region. Myth- logically, Kapili River has been referred as “Kopili Ganga” as per “Kalika Puran”. Here the words, “ko” meaning “Brahma” and the word “Pil” referred as “Beel” or “wetland”. As the creator of the river is “Brahma” or the flows from the wetland, in course of time it takes the name of “Kapili River”. Moreover, there was a lot of promise that the “Purana” famous Muni had an Ashram at the origin of the Kapili River and it is believed that the river came to be known as Kapili River in the name of Kapil Muni.

The famous king of Dravidian Origin or Barahi Dynasty Dharma Pal Raja shifted his capital to Kapilpar in Nagaon District where he renamed the place as Kamrupa Nagar. According to the Archaeologist Rajmohan Nath, “The Dharmapala” (1090-1115 A.D) shifted his capital from Durjoyo to a new place on the bank of Kapili River and named the city as Kamarupa Nagar which again was subsequently named Kamarupa pur and is known as Kampur- a sub-station in the Nagaon district.

During the reign of King Prithu Dev of Deva Dynasty, a king of the Barahi Pal Dynasty was a king under this king of Kamrup in the Kapili Valley as the lower king, and the capital of this king is at Kampur as opined by Archaeologist Rajmohan Nath.

During the reign of Swargodeu Pratap Singha (1603-41 A.D), on the Sothern bank of River Kapili a “Chang-ghar” was built and later modified to a out-post and in course of time the place came to be known as “Chang-Chaki”.

1.3 CLIMATE:

The climate of the Nagaon district as well as Kampur town is characterized by a highly humid atmosphere all through the year. Summer heat is relieved to a great extent by the cool breeze of the river Kapili. The monsoon starts from the month of May and continues up to August. The winter is cool and starts from November and continues up to February. Generally, weather is dry. The maximum and minimum temperature varies from 38.40 Degree C (Max.) 8.60 Degree C (Min). The maximum rain occurs between June to September and average annual rainfall of Kampur is 1726.05 MM.

Table 1: Climatic condition of Kampur

SL.No.	Parameter	Description
1.	Topography	Mostly Alluvial Flood Plain
2.	Temperature	38.40 Degree C (Max.) 8.60 Degree C (Min)
3.	Extreme months	July in Summer and December in Winter
4	Coldest month of the Year	December
5	Humidity	75% (Max)
6	Rainfall	1726.05 MM (Annually)
7.	Monsoon Period	53 rainy Days
8.	Winter Season	November to February

1.4 TOPOGRAPHY:

Kampur town is situated on the flat alluvial plain which slopes towards south and south-east where the old beds of the Kapili River are still in existence. Many beels, ponds and marches surrounded the town as well as the Master Plan Area. The Dighali beel lies in the North-west of the town. The beel and marches are teemed with verities of fishes and birds.

The land is alluvial and loamy and consists of clay and sand. The cultivable land is scattered either sides of the beels as well as the surrounding villages nearest to the town. In considering the high land as well as the physical features of the surrounding areas the Town is growing mainly towards north-east towards the National Highway-36, south-west, towards the National Highway -37. Some developments have also taken place along other major roads connecting in some trading centres in the district.

1.5 CITY INFLUENCE AND ITS CHARACTERISTICS INCLUDING SETTLEMENT PATTERN, RURAL-URBAN SCENARIO, HISTORY OF THE PHYSICAL GROWTH AND EXPANSION OF KAMPUR TOWN:

Rural-Urban fringe is an important concept in settlement geography. The rural-urban fringe is the boundary zone outside the urban area proper where rural and urban land uses intermix. It is the area where the city meets the countryside. It is an area of transition from agricultural and other rural land uses to urban use. Located well within the urban sphere of influence the fringe is characterized by a wide variety of land use including dormitory settlements housing middle-income commuters who work in the central urban area. Over time the characteristics of the fringe change from largely rural to largely urban. Suburbanization takes place at the municipal boundary of rural-urban fringe.

The main economy of the Kampur rural-urban fringe is agriculture base. The surrounding small villages were also influencing the main urban centre. The trading of agricultural finished goods produce in the rural-urban fringe area was taking place with the main urban centre.

While considering the agro-based economy of the rural-urban fringe, secondary and other allied services have to be initiated to boost up the economic growth of the main urban center as well as the whole Kampur planning area. The main reason of low-profile economy of the town is that less number of people is engaged in secondary, quaternary and other allied services.

Activities related to trade and commerce and transportation alone comprise only 32% of the total employment of the town. It is expected that employment related to transportation and trade & Commerce is going to increase further after the road linkage is established with the town and surrounding villages.

Lack of infrastructure is also responsible in a substantial manner for economic and industrial development of the Kampur town. If adequate urban infrastructure such as efficient transportation network, well planned market etc. is provided then the town cannot only upgrade its economic base but also act as a centre for industrial activities of the whole Kampur planning region.

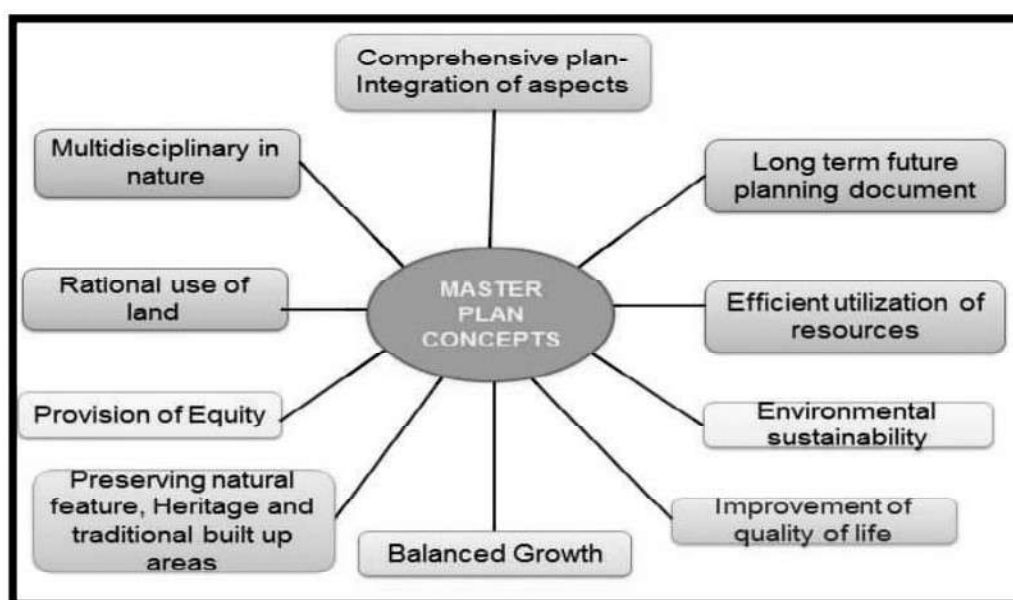
Therefore, the prime objective of the development strategy of Kampur town will be to bring positive development in the town by improving existing physical infrastructure of the town, so as to encourage more and more people to participation in the secondary and tertiary sector or employment. This will generate more employment in the town, strengthen the local bodies as well as improve the socio-economic condition of the people.

At present it is observed that different type of developmental works already come up in nearby villages and potential for future development of the region. The town has been growing towards Kampur- Kathiatoli Road, Kampur –Nagaon road and Kampur –Raha Road. Some major developments also come along the Kampur- Kathiatoli Road connecting NH-36.

1.6 CONCEPT OF MASTER PLAN:

Master Plan is comprehensive that is it integrates various aspects of planning like housing, transportation, infrastructure etc. All the aspects are considered that affects the quality of life of people and all the interrelationships between various aspects; Multidisciplinary in nature: it encompasses various disciplines of studies like social aspects, economics, environment, engineering, architecture etc.; Master plan is a long-term document. It clears out the vision for prospective year for the city and plans out development for future; Master plan focuses on rational use of land that is demarking land for the use most optimal for the activity at a place. It efficiently uses resources to meet the present and future requirements of the citizens; Master plan should consider the environmental and costs related to it.

The proposals for development should be environmentally sustainable. Master Plan is based on inclusive planning. It considers all sections of people in society in development proposals and focuses on affordability. Master plan gives restrictions on ecologically sensitive areas, on heritage sites and traditional built up areas and gives special norms for these places. Master Plan leads to a balanced growth of the city. It prevents concentration of a particular activity at one place and takes into account efficient distribution of facilities, infrastructure, networks and housing and follows neighbourhood concept of development.



1.7 NEED OF A MASTER PLAN FOR KAMPUR TOWN:

A master plan or a development plan or a town plan may be defined as a general plan for the future layout of a city showing both the existing and proposed Land use plan. A master plan is prepared either for improvement of an old city or for a new town to be developed on a virgin soil. A master plan is a blueprint for the future. It is a comprehensive document, long-range in its view; that is intended to guide development in the township for the next 20 to 25 years.

It helps in restricting the haphazard and unplanned growth, arranges the pattern of a town in such a way so as to satisfy the present requirements without introduction of future improvements by the coming generations. It also aims at intelligent and economic spending of the public funds for achieving welfare of the inhabitants in respect of amenity, convenience and health.

On the other hand, Master Plan also serves as a guide to the planning body for making any recommendations for public improvement. It removes the defects of uncoordinated physical growth of the various components of a town due to the fact that it considers the entire city area or town as planning and development entity.

To offset the evils which have come up due to over-crowding of population such as acute shortage of houses, traffic congestion, inadequate open spaces and insufficiency in public amenities etc, to incorporate the unforeseen development and arranges the pattern of township and in restricting the haphazard and unplanned growth have led to the thinking of Preparation of GIS based Master Plan for Kampur town.

1.8 KAMPUR AS A URBAN LOCAL BODY:

Kampur Municipal Board: Initially Kampur Town Committee was established on 01-04-2002 getting permission vide Gazette Notification No. M.A.-297/95/31, Dated 16/10/1996 and awarded to Kampur Town by the Government of Assam to establish a Town Committee for providing the basic infrastructure facilities to the inhabitants of the town. The Town Committee was established and run-in accordance with the provisions laid down in the Assam Municipal Act of 1956. Kampur town comes under the Administration of Kampur Town Committee with 10 Nos. of wards in the town and as on 2021 there are 10 Nos. of Municipal wards in the town.

The Town Committee was updated to Kampur Municipal Board vide Govt. Notification No. UDD(M)263/2017/13, Dated Dispur the 11th October, 2018.

At present Kampur Municipal Board consists of 10 Nos. of wards in the town with a population of 10,371 as per 2011 census where 5090 nos. of male population and 5281 nos. of female population. The density of population is 1700 persons per Sq. Km.

Total area of Kampur Municipal is 6.10 Sq. Km. with total road length of 37.67 Km and drain length of 2.90 Km. Kampur Municipal Board consists of the Chairman, Vice-Chairman and wards commissioners who are elected representatives of the wards. The Chairman is the head of the Administration and presides over the meetings of the board. The Executive Officer oversees and administers the plan and execution of the day - to-day activities of the board. Kampur Municipal Board is basically entrusted with the maintenance of roads and drainage system, streets lights, public health facilities and medical, water supply to the inhabitants in the Municipal boundaries in collaboration with PHE Department. Kampur Municipal Board also maintains recreational parks, libraries, community halls and municipal markets. It has also maintained solid waste management system. Kampur M.B. also collects about 80% garbage from door to door of the total inhabitants and disposes it in some convenient places.

Kampur Municipality Boards has various sources of revenue collection and also receive annual grants from the Government. It levies taxes on holdings, rickshaws, carts, cycles, stalls, open spaces, markets, and cinema halls and receives taxes on houses, land, water and sanitation.



Kampur Municipal Board Office

CHAPTER 2:**DEMOGRAPHY**

The scientific or more specifically statistical study of population, its size, density, distribution and growth are known as demography. The study of population and its relating characteristics are the basic factor for long range planning works in a town or a city. The study of change in the population and its distribution and composition are also enabling to force the growth of the urban area. The important demographic aspects like housing facilities, urban infrastructure development both for present and future should be thoroughly studied during the preparation of any development plan.

An analysis of demographic features like growth of palpation, its distribution & composition etc. is absolutely necessary to assess the various civic needs like housing facilities, urban infrastructure and other basic services and the amenities. This important aspect of demography both present and future have been thoroughly studied at the time of preparation of Kampur Master Plan.

2.1GROWTH OF POPULATION:

Though the Kampur Town Committee was created in the year 2002, to better understand the growth of population of the planning area had been calculated from 1951 Census. The population of Kampur town as per 1971, the then census town was 6679 and it has increased to 9266 in 2001 and 10371 in 2011 as per census of India. The population of Kampur Master Plan area shows a steady growth. Following table shows the growth of population of Kampur Town Area as well as the Rural area.

Table 2: Trend of Population Growth in Kampur Master Plan Area:

Year	Kampur MB Population	Growth Rate	Kampur MP Population excluding Kampur MB Population	Growth Rate	Kampur MP Population Total	Growth Rate
1951	4067	---	8058	---	12125	---
1961	4874	19.84	10516	30.50	15390	26.93
1971	6679	37.03	10782	2.53	17461	13.46
1991	8355	25.09*	15239	41.34*	23594	35.12*
2001	9266	10.90	17609	15.55	26875	13.91
2011	10371	11.93	17963	2.01	28334	5.43

*20 Years growth rate

Source-Census of India

2.2 POPULATION CHARACTERISTICS:**Table 3:** Existing population of Kampur Master Plan Area as per 2011 census

Sl. No.	Master Plan Area 2046	Population (2011)	P.C (%)
1	Kampur Municipal Area (10 wards)	10,371	36.60
2.	12 Revenue village	17,963	63.40
	Total Population	28,334	100 %

The total population of Kampur Master Plan area as per 2011 census is 28,334 out of which 10,371 i. e. 36.60 % within municipality area covering 10 Nos. of wards in which 5090 are males while 5281 are females and rural area population is 17,963 which is about 63.40% of the total planning area population.

Table 4: Village/ Town Wise Population of Kampur Master Plan area as per Census Year 2011

Name of the Village/MB Area	Total Households	Total Population	Total Male Population	Total Female Population	Total Scheduled Tribes Population	Total Scheduled Castes Population
1. Kampur MB	2342	10371	5230	5141	117	900
KAMPUR URBAN	2342	10371	5230	5141	117	900
1. Niz Narikali	235	945	457	488	21	114
2. Kukuribari	112	534	264	270	2	528
3. Darangi Gaon	313	1374	638	736	0	0
4. Niz Kampur	553	2510	1245	1265	1	0
5. Majarati	195	916	465	451	21	572
6. Tetelisor Gaon	339	1631	831	800	18	960
7. Tetelisor Grant (Tetelisor)	327	1501	706	795	705	288
8. Uttar Chang Chaki	157	675	350	325	1	169
9. Dakhinpat	335	1524	761	763	0	269
10. Charaihagi	100	437	220	217	0	72
11. Ghilani	1008	4780	2349	2431	12	1202
12. Dakhin Chang Chaki	279	1136	544	592	0	4
KAMPUR RURAL	3953	17963	8830	9133	781	4178
KAMPUR RURAL + URBAN	6295	28334	14060	14274	898	5078

Source-census of india

Table 5: Village/ Town Wise Population of Kampur Master Plan area as per Census Year 2001

Name of the Village/MB Area	Total Households	Total Population	Total Male Population	Total Female Population	Total Scheduled Tribe Population	Total scheduled caste population
1. Kampur (CT)	1096	5409	2794	2615	13	879
2. Borpotia	456	2361	2106	1155	9	71
3. Bhalbholia Gaon	232	1496	802	694	11	70
KAMPUR URBAN	1784	9266	5702	4464	33	1020
1. Niz Narikali	190	898	471	427	18	140
2. Uttar Chang Chaki	122	596	311	285	1	185
3. Dakhin Chang Chaki	212	1041	503	538	--	13
4. Majarati	194	1014	493	521	--	476
5. Tetelisora Gaon	284	1587	817	770	--	937
6. Tetelisora Grant	273	2462	721	741	668	318
7. Dakhinpat	294	1489	743	746	--	277
8. Charaihagi	79	348	184	164	239	1
9. Ghilani	772	4044	2048	1996	1	391
10. Niz Kampur	481	2407	1177	1230	43	--
11. Kekuri Bari	44	281	139	142	--	460
12. Darangi Gaon	264	1442	725	717	--	---
KAMPUR RURAL	3209	17609	8332	8277	970	3198
KAMPUR RURAL + URBAN	4993	26875	14034	12741	1003	4218

Table 6: Village/ Town Wise Population of Kampur Master Plan area as per Census Year 1991

Name of the Village/MB Area	Total Households	Total Population	Total Male Population	Total Female Population	Total Scheduled Tribe Population	Total scheduled caste population
1. Kampur	894	4759	2542	2217	26	586
2. Borpotia	367	2081	1073	1008	256	4
3. Bhalbholia Gaon	309	1515	807	708	99	3
KAMPUR URBAN	1570	8355	4422	3933	381	593
1. Niz Narikali	142	761	401	360	--	133
2. Uttar Chang Chaki	89	580	300	280	192	--
3. Dakhin Chang Chaki	159	952	482	470	--	--
4. Majarati	54	319	149	170	--	--
5. Tetelisora Gaon	342	2091	1019	1072	--	1315
6. Tetelisora Grant	229	1400	679	721	349	616
7. Dakhinpat	249	1418	709	709	278	--
8. Charaihagi	48	262	137	125	--	--
9. Ghilani	584	3281	1688	1593	445	--
10. Niz Kampur	428	2348	1188	1160	110	2
11. Kekuri Bari	81	506	152	154	--	426
12. Darangi Gaon	260	1321	665	656	--	--
KAMPUR RURAL	2665	15239	7569	7470	1374	2492
KAMPUR RURAL + URBAN	4235	23594	11991	11403	1755	3085

Source-Census of India

Table 7: Village/ Town Wise Population of Kampur Master Plan area as per Census Year 1971

Name of the Village/MB Area	Total Household	Total Population	Total Male Population	Total Female Population	Total Scheduled Tribe Population	Total scheduled caste population
1. Kampur Town	497	3478	1934	1544	371	549
2. Borpotia	315	2208	1152	1056	--	203
3. Bhalbholia Gaon	165	993	542	451	--	73
KAMPUR URBAN	977	6679	3628	3051	371	825
1. Niz Narikali	87	522	277	245	--	130
2. Uttar Chang Chaki	66	395	208	187	--	137
3. Dakhin Chang Chaki	136	816	427	389	--	--
4. Majarati	132	791	394	397	--	405
5. Tetelisora Gaon	197	1378	703	675	--	806
6. Tetelisora Grant	175	1051	538	513	387	199
7. Dakhinpat	144	168	443	426	--	201
8. Charaihagi	88	617	325	292	--	80
9. Ghilani	399	2399	1205	1194	--	210
10. Niz Kampur	285	2099	1080	1019	2	2
11. Kekuri Bari	14	88	51	37	--	--
12. Darangi Gaon	76	458	226	232	386	--
KAMPUR RURAL	1799	10782	5877	5606	775	2170
KAMPUR RURAL + URBAN	2776	17461	9505	8657	1146	2995

Table 8: Village/ Town Wise Population of Kampur Master Plan area as per Census Year 1961

Name of the Village/MB Area	Total Household	Total Population	Total Male Population	Total Female Population	Total Scheduled Tribe Population	Total scheduled caste population
1. Borpotia	673	3662	2180	1482	11	153
2. Bhalbholia Gaon	179	1212	672	540	--	14
KAMPUR URBAN	852	4874	2852	2022	11	167
1. Niz Narikali	130	494	258	236	--	126
2. Uttar Chang Chaki	57	350	191	159	--	28
3. Dakhin Chang Chaki	106	683	346	337	--	--
4. Majarati	92	693	337	356	--	--
5. Tetelisora Gaon	180	1197	617	580	--	--
6. Tetelisora Grant	125	926	513	413	--	--
7. Dakhinpat	171	1103	575	528	--	226
8. Charaihagi	39	177	87	90	--	72
9. Ghilani	209	1809	921	888	--	128
10. Niz Kampur	255	1852	964	888	--	--
11. Kekuri Bari	44	254	128	126	--	254
12. Darangi Gaon	49	978	524	454	--	--
KAMPUR RURAL	1457	10516	5461	5055		834
KAMPUR RURAL + URBAN	2309	15390	8313	7077	11	1001

Source-census of India

Table 9: Village/Town Wise Population of Kampur Master Plan area as per Census Year 1951

Name of the Village/MB Area	Total Household	Total Population	Total Male Population	Total Female Population	Total Scheduled Tribe Population	Total scheduled caste population
1. Borpotia	870	3346	1801	1545	--	--
2. Bhalbholia Gaon	110	721	372	349	--	--
KAMPUR URBAN	980	4067	2173	1894	--	--
1. Niz Narikali	--	--	--	--	--	--
2. Uttar Chang Chaki	78	304	156	148	--	--
3. Dakhin Chang Chaki	--	--	--	--	--	--
4. Majarati	86	586	294	292	--	--
5. Tetelisora Gaon	197	1133	604	529	--	--
6. Tetelisora Grant	134	807	439	368	--	--
7. Dakhinpat	181	968	522	446	--	--
8. Charaihagi	20	107	61	46	--	--
9. Ghilani	153	1564	823	741	--	--
10. Niz Kampur	254	1565	784	781	--	--
11. Kekuri Bari	37	199	103	96	--	--
12. Darangi Gaon	117	825	452	373	--	--
KAMPUR RURAL	1257	8058	4238	3820	--	--
KAMPUR RURAL + URBAN	2237	12125	6411	5714	--	--

*Source-census of india***2.3 DENSITY OF POPULATION:**

The number of population and the size of development of the town or city implies the density of population. Generally, the pressure of population from rural to urban area increases in search of better jobs, educational facilities, source of income, trade and commerce etc. The density of population of Nagaon District as per 2001 was 604 persons per sq. km. and it has increased to 711 persons per sq. km in 2011 census.

The density of population Kampur Town as census town (C.T) area as per 2001 census was 3512 persons. Accordingly, as per 2011 census of India and survey records the density of population in Kampur M.B area is 1700 persons per sq. km. while population density of Kampur Maser plan area is 752 persons per sq. Km

Table 10: Ward wise Population Density as per 2011 census:

Ward No.	Area (Sq. Km)	Population			No. of Household	Population Density (per sq.km)
		Male	Female	Total		
1	0.506	520	530	1050	228	2075
2	0.534	410	422	832	143	1558
3	0.717	456	486	942	227	1314
4	0.298	405	410	815	240	2735
5	0.336	985	1016	2001	303	5955
6	0.687	442	458	900	289	1310
7	0.255	501	536	1037	249	4067
8	0.705	610	668	1278	288	1813
9	0.951	369	371	740	213	778
10	1.113	392	384	776	162	697
Total	6.103	5090	5281	10371	2342	1700

*Source: Census of India***Table 11:** Population Density of Kampur Master Plan Area: 2011

Sl. No.	Kampur Master Plan Area	Area	Population	Pop. Density /Sq.km
1	Kampur M.B Area	6.10 Sq km.	10,371	1700
2	Village Area	31.52 Sq Km.	17,963	569
	Kampur Master Plan	37.62	28,334	753

*Source-census of India & T&C. compilation***2.4 SEX-RATIO:**

The total population of the Kampur M.B area is 10,371 persons (2011), out of which 5090 Male and 5,281 are Female. Population of Children with age of 0-6 is 1035 which is 9.98 % of total population of Kampur M.B. In Kampur M.B, Female Sex Ratio is of 983 against state average of 958. Moreover Child Sex Ratio in Kampur Town is around 917 compared to Assam state average of 962. While in Kampur Master Plan Area there is 1015 females per 1000 male.

Table 12: Sex Ratio of Kampur Master Plan Area:

Sl. No.	Kampur Planning Area	Population	Sex Ratio	
			Male	Female
1.	Kampur M.B Area	10,371	5090	5281
2.	Village Area	17,963	8830	9133
	Kampur Master Plan	28,334	14060	14274

Source-Census of India

2.5 LITERACY RATE:

Literacy rate of Kampur Town is 88.28 % higher than state average of 72.19 %. In Kampur Town, Male literacy is around 91.28 % while female literacy rate is 85.26 %. Schedule Caste (SC) constitutes 8.68 % while Schedule Tribe (ST) was 1.13 % of total population in Kampur M.B.

The total literacy rate of the town area is 89.15% (2011) which is greater than the average literacy rate of the state. Population-wise, out of total 97,516 literates, males were 50,996 while females were 46,520. Also, the male literacy rate is 91.98% and the female literacy rate is 86.25%.

In Kampur Town area there is 974 females per 1000 male. The population of children of age 0-6 years in Nagaon Town Area is 11950 which are 10% of the total population. There are 6056 male children and 5894 female children between the ages of 0-6 years. Thus, as per the Child sex ratio of the town is 981 which is greater than the average sex ratio.

Population of Children with age of 0-6 is 1035 which is 9.98 % of total population of Kampur M.B. In Kampur M.B, Female Sex Ratio is of 983 against state average of 958. Moreover, Child Sex Ratio in Kampur Town is around 917 compared to Assam state average of 962. Literacy rate of Kampur Town city is 88.28 % higher than state average of 72.19 %. In Kampur Town, Male literacy is around 91.28 % while female literacy rate is 85.26 %. Schedule Caste (SC) constitutes 8.68 % while Schedule Tribe (ST) was 1.13 % of total population in Kampur M.B.

2.6 SIZE OF THE HOUSEHOLD:

The 2011 Census shown that more than half of the household in the region were medium sized with an average member of 3 to 5. According to census 2011 the medium sized households (3-4) is predominant because of the increasing trends towards nuclear households and rapid urbanization are at higher rate, there will be considerable pressure on housing in coming future. The overall household size of Kampur Master Plan Area is 4.5. Household size is lowest in Kampur Municipal which is 4.4 and highest in rural areas which is 4.5

Table 13: Area wise household details Kampur Master Plan Area

SL No.	Name of Area	Population	No. of Household	Percentage	Household size
1	Kampur MB	10,371	2342	37.20	4.4
2	Villages	17,963	3953	62.80	4.5
Kampur Master Plan		28,334	6295	100	4.5

(Source: Census of India, 2011 and T& CP Compilation)

2.7 POPULATION PROJECTION:

Population projections are attempts to show how the human population living today will change in the future. These projections are an important input to forecasts of the population's impact on this planet and humanity's future well-being. Models of population growth take trends in human development, and apply projections into the future. These models use trend-based assumptions about how populations will respond to economic, social and technological forces to understand how they will affect fertility and mortality, and thus population growth.

Population projection is a scientific/mathematical attempt to peep into the future population scenario, conditioned by making certain assumptions using data to the past available at the point of time.

It is mandatory for Government policy makers and planners to determine the future demand for basic human needs such as food, water, education, health, energy, and other services and to forecast future demography characteristics.

The population projection of Kampur Master Plan area separately for Municipal area and rural area has been done by utilizing the maximum possible accuracy. Geometric progression method has used to determine the future projected population of Kampur Master Plan Area.

Geometric Progression Method: - Geometric mean increase is used to find out the future increment in population. Since this method gives higher values and hence should be applied for a new industrial town at the beginning of development for only few decades.

Table 14: STUDY OF DECADAL GROWTH RATE IN KAMPUR MP AREA & ASSUMPTION OF ESTIMATED GROWTH RATE

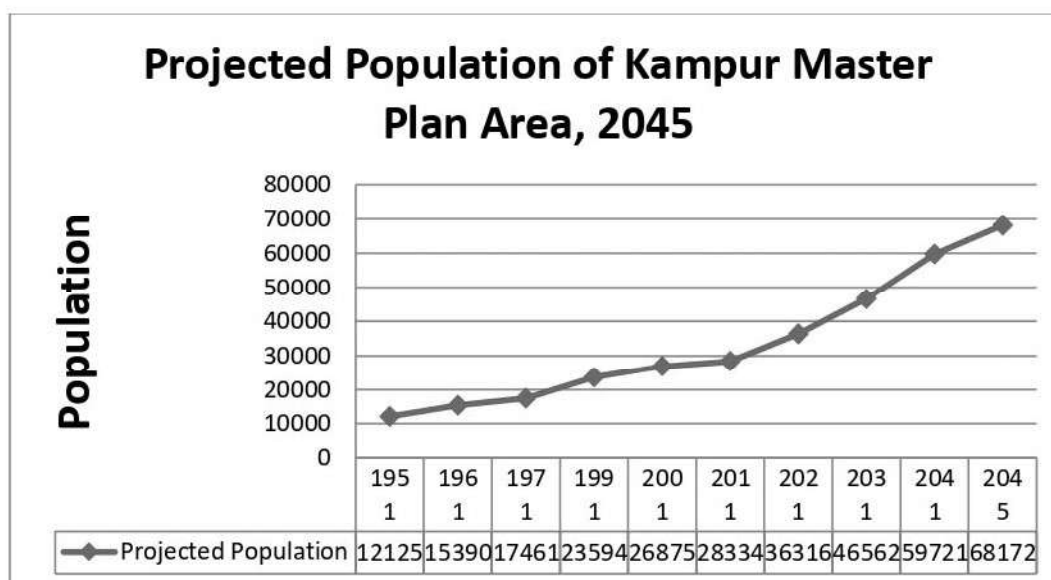
STUDY OF GROWTH RATE	MB area	Village Area
	19.84	26.93
	37.03	13.46
	25.09	35.12
	10.90	13.91
	11.93	5.43
TOTAL SIX DECADES GROWTH RATE	104.80	94.84
AVERAGE GROWTH RATE	17.47	15.81
Say	25.00	30.00

Table 15: POPULATION PROJECTIONS by GEOMETRIC PROGRESSION METHOD

Year	Kampur MB Population	Growth Rate	Kampur MP Population excluding Kampur MB Population	Growth Rate	Kampur MP Total Population	Growth Rate	
1951	4067	---	8058	---	12125	---	
1961	4874	19.84	10516	30.50	15390	26.93	
1971	6679	37.03	10782	2.53	17461	13.46	
1991	8355	25.09	15239	41.34	23594	35.12	20 Years growth rate
2001	9266	10.90	17609	15.55	26875	13.91	
2011	10371	11.93	17963	2.01	28334	5.43	
2021	12964	25.00	23352	30.00	36316	28.17	
2031	16205	25.00	30357	30.00	46562	28.22	
2041	20256	25.00	39465	30.00	59721	28.26	5 years growth rate
2045	22788	12.50	45384	15.00	68172	14.15	

Source-census of India and T&C.P compilation

Method	2001	2011	2021	2031	2041	2045
Geometric Progression Method	26875	28334	36316(P)	46,562 (P)	59721 (P)	68172 (P)



CHAPTER 3:**ECONOMIC BASE AND EMPLOYMENT:**

Socio-economic base employment is necessary and important in policy making issues, for the effective development of social policy and for evaluation of the impact of social and economic policies of a city or town.

Kampur as a Municipal Town provides various categories of employment related with both formal and informal sector such as administrative units, Agriculture, Banks and financial institution, Civil Supply, Consumer affairs, Co-operatives, crime and law, economy, education, Health, Housing, industries, insurance, social welfare schemes, welfare, sports and welfare etc. Employment comprises all persons of working age who during a specified brief period, such as one week or one day, were in the following categories of paid employment (whether at work or with a job but not at work); or self-employment (whether at work or with an enterprise but not at work).

The working- age population is the population above the legal working age, but for statistical purposes it comprises all persons above a specified minimum age threshold for which an inquiry on economic activity is made.

The classification by economic activity refers to the main activity of the establishment in which a person worked during the reference period. The branch of economic activity of a person does not depend on the specific duties or functions of the person's job, but on the characteristics of the economic

3.1 INFORMAL SECTOR EMPLOYMENT:

Observed encroachments on the footpath by vendors, which acutely rise the traffic congestion between include intersection Kampur Thana Road, Kampur Main bazar road, Kampur Rail crossing Area have this illegal vending and parking on both sides of the road and the resultant traffic need to resolve

3.2 OCCUPATIONAL PATTERN:

In census survey, worker is defined as person who does business, job, service, and cultivator and labour activity. The capacity of an urban area to provide variety of jobs, absorb its working population in various sectors of economy is an indicator of the economic viability of the urban area. The participation rate also gives us an idea of the share of gainfully employed persons against the dependent and non-working population. Generally, the participation rate in the urban area is high compared to the rural area.

As per census, 2011 the total population of Kampur Master Plan is 28,334, out of which about 11,922 persons are employed in various sectors. i. e. 42.08 %. (formal sector)

In Kampur Municipal Area, out of total population, 4,239 were engaged in work activities. 70% of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 30% were involved in Marginal activity providing livelihood for less than 6 months. Out of 4,239 workers engaged in Main Work, 305 were cultivators while 53 were Agricultural labourers.

3.3 WORKING POPULATION AND NON-WORKING:

Working Population: As per 2011 census total population of Kampur Municipal Area is 10,371. Out of the total population, 4239 (40.87%) were engaged in work activities and 6132 (59.13%) persons are non-working population. 70% of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 1,272 persons (30%) were involved in Marginal activity providing livelihood for less than 6 months. Out of the total workers Main Workers, 305 were cultivators (owner or co-owner) while 53 were Agricultural labourers and 90 were engaged in household industries.

Table 16: Participation of Working population and non-working of Kampur Municipal Board as per census of India, 2011

Working Population	Total	Male	Female
Total workers	4239	3007	1232
Main Workers	2,969	2,500	469
Cultivators	305	286	19
Agriculture Labourer	53	38	15
Household Industries	90	79	11
Other Workers	2,521	2,097	424
Marginal Workers	1,270	507	763
Non -Working	6132	2223	3909

Source: Census of India

Table 17: Occupational patterns of Population of Kampur Master Plan Area:

Sectors	Kampur M.B		Kampur Master Plan area excluding Kampur M.B ea		Kampur Master Plan area	
	No.	%	No.	%	No.	%
Primary Sector	358	12.05	4914	63.70	5423	45.37
Secondary Sector	90	3.03	475	6.16	584	4.89
Tertiary Sector	2521	84.91	2325	30.14	5945	49.74

Source: Economics and Statistical Dept. and T&CP compilation

CHAPTER 4:**HOUSING AND SHELTER**

The word "Housing" means dwelling units in terms of quality and quantity alone. Housing or quality of life is more dependent on some elements of housing areas such as disposition of various working areas, layouts development of land, provision of roads, water supply system, sewerage, drainage and provision of basic amenities like shops, schools, parks and play grounds etc. The urban form and character emerge from the quality of housing areas and inter relationship of housing areas with work centre and other non- residential areas.

The urban housing is mainly restricted to within the Municipal boundaries. The residential areas outside the municipal areas are rural housing. Normally the rate of housing spread of town should range between 6-7 hectare per 1000 persons and the rate of housing spread within The Master Plan Area is around 22 Hectare per 1000 persons.

Table 18: Ward wise population distribution and Nos. of households of Kampur Municipal Area

Ward No.	Population as per 2011	No. of household	Housing size
1	1050	228	4.60
2	832	143	5.8
3	942	227	4.1
4	815	240	3.4
5	2001	303	6.6
6	900	289	3.1
7	1037	249	4.1
8	1278	288	4.4
9	740	213	3.4
10	776	162	4.7
Total	10,371	2342	4.4

Source- Census of India

Table 19: Village wise population distribution and occupied residential houses of Kampur M.P. Area as per 2011 census

Name of the Village/MB Area	Total Households	Total Population	Total Male Population	Total Female Population	Housing Size
1.Niz Narikali	235	945	457	488	4.02
2.Kukuribari	112	534	264	270	4.76
3.Darangi Gaon	313	1374	638	736	4.38
4.Niz Kampur	553	2510	1245	1265	4.53
5.Majarati	195	916	465	451	4.69
6. Tetelisora Gaon	339	1631	831	800	4.81
7. Tetelisora Grant (Tetelisora)	327	1501	706	795	4.59
8. Uttar Chang Chaki	157	675	350	325	4.29
9. Dakhinpat	335	1524	761	763	4.54
10. Charaihagi	100	437	220	217	4.37
11. Ghilani	1008	4780	2349	2431	4.74
12. Dakhin Chang Chaki	279	1136	544	592	4.07
KAMPUR RURAL	3953	17963	8830	9133	4.54

*Source-Census of India***4.1 HOUSING CONDITION:**

Housing is a major element of people's material living standards. It is essential to meet basic needs, such as for shelter from weather conditions, and to offer a sense of personal security, privacy and personal space. Good housing conditions are also essential for people's health and affect childhood development.

Housing condition includes the study of housing base on type of structure i.e., permanent/ semi-permanent, physical infrastructure, mass space relationship, condition of the material use for walls and floors etc. It is important to be studied because it indicates the efficiency and sustainability of the housing stocks, whether the houses are liveable or not. Based on the above said parameters, the condition of houses has been segregated and the analysis is done as good, liveable and dilapidated houses of Kampur Municipal Area comparing with Nagaon District.

Table 20: Housing condition

Residence (%)				
Area	Total	Good	Liveable	Dilapidated
Assam	62,72,151	33%	56%	11%
Nagaon District	5,53,106	30%	57%	13%
Kampur MB	2342	52 %	42 %	6 %

Source: Census of India, 2011 and T&CP, Nagaon Compilation

4.2 CONSTRUCTION MATERIAL OF HOUSE:

The survey carried out by Town and Country Planning, Nagaon in 2020-21 and as per Census of India, 2011, it is found that the overall housing condition in the Kampur Master Plan area is quite satisfactory. Though the percentage of R.C.C structure is less in the planning area, the semi pucca structure occupies more than 70% of the total houses. The following table shows the condition of existing housing stocks of Kampur Master Plan Area

Table 21: Materials used for roof

Area Name	Total Number of HHs	Grass/ Thatch/ Wood/	Plastic Polythene	Handmade Tiles	Machine made	Burnt Brick	Stone/ State	G.I./ Metal/ Asbestos/	Concrete	Any other Material
State	62,72,151	18.60%	2.10%	0.70%	0.3%	0.1%	0.80%	74.20%	2.90%	0.20%
District	5,60,857	26%	3%	0.00%	0.0%	0.0%	1.00%	69%	1%W	0.00%
KMB	2342	1.65 %	0.51 %	0.00%	0.0 %	0.0%	1.00 %	83 %	13.84 %	0.00%

Source: Census of India, 2011

Table 22: Materials used for walls

Area Name	Grass/ Thatch/ Bamboo	Plastic/ Polythene	Mud/ Unburnt	Wood	Stone not packed	Stone packed	G.I./Metal / Asbestos	Burnt Brick	Concrete	Any other Material
State	66.40%	0.60%	3.60%	1.60%	0.70%	1.40%	1.10%	21.20%	2.90%	0.50%
District	67%	0%	4%	2%	1%	2%	0%	19%	3%	1%
KMB	26 %	0.10 %	1 %	1%	1.5 %	14%	1 %	32 %	23 %	0.4 %

Source: Census of India, 2011

Table 23: Materials used for floor

Area Name	Mud	Wood/ Bamboo	Burnt Brick	Stone	Cement	Mosaic/ Floor Tiles	Any other material
State	78.60	2.10	1.20	0.40	16.60	1.00	0.10
District	83%	0%	1%	0%	15%	0%	0%
KMB	23 %	0.12 %	7.44%	5..21 %	63 %	1.23 %	0 %

Source: Census of India, 2011

4.3 AVAILABILITY OF LATRINE AND BATHROOM:

As per 2001 Census about 86.8% of households have sanitary latrine and Bathroom and 12.6% of the households have other type of latrine in the Kampur Master Plan Area.

4.4 HOUSING STOCK AND FUTURE REQUIREMENT:

The housing requirement is more in the urban area than that in the rural areas. Almost all people in rural area have got their own house. The total housing stock and future requirement of houses up to 2045 in the Kampur Master Plan Area were calculated based on the city/ town level data on the houseless population and pavement dwellers, the houseless population is derived from the data published as part of Census of India, 2011. The total requirement of dwelling unit in the planning area as per the planning norms is as follows: -

4.5 HOUSING REQUIREMENT FOR FUTURE POPULATION OF TOWN AREA TILL 2045:**Housing Requirement for future Population of Kampur Town Area till 2045:**

$$22788 - 10371 = 12417$$

Assuming family size of 5 persons, new houses will be required $12417/5 = 2483$ Nos.

Housing Requirement for future Population of Rural Area till 2045:

$$45383 - 17963 = 27421$$

Assuming family size of 5 persons, new houses will be required
 $27421/5=5484$ Nos.

Housing Requirement for future Population of Kampur Master Plan Area till 2045

$68172-28334=39838$ Nos.

Assuming family size of 5 persons, new houses will be required $39838/5 =$
7967Nos.

Table 24: Total housing stock and future requirement of houses for Kampur Master Plan

Sl. No	Area	Total no. of housing stock as per 2011	Housing requirement up to 2045
1	Kampur M.B.	2342	2483
2	Rural Area	3953	5484
Kampur M. P.		6295	7967

Source-census of India & T&CP

CHAPTER 5:

TRANSPORTATION

Transportation plays a major role in the daily life of human beings. It is necessary for things to be moved around and as transportation systems have developed over time, the speed and efficiency of these systems have improved drastically.

The importance of transportation is showcased in how individuals, businesses, and governments rely on it to access resources. A society cannot function optimally if it does not have measures in place to facilitate transport. From movement to work to travel around the world, being able to arrive at various places or deliver different items on time is vital for overall productivity and sustainable development.

In consideration of healthy growth, economic prosperity and improved living standards of a town or a city, a high- quality transportation network is essential. In addition, transportation and land use are to be integrated to achieve reduction in trip length, increase in public transports usage etc.

5.1TRANSPORTATION NETWORK:

5.1.1Regional Connectivity of Kampur:

Kampur is well connected to Assam major cities like Nagaon, Guwahati, Jorhat, Karbi Anglong, Morigaon through PWD roads to State highways via National highways which further connects to rest part of Assam in particular and India as a whole.

5.1.2Interstate Connectivity from Kampur:

Kampur is connected to major cities of Assam and other state of India by road and Rail. Table manifest the time taken (in hrs) and distance (in km) from Kampur to important cities of Assam and other state by different modes of transportation.

Nagaon is the nearest major city and district headquarters, from Kampur which covers minimum distance i.e. 28 km. From state capital Guwahati to Kampur it covers a distance of 121 km. Other, important cities of different states capital like Kohima, Imphal, Shillong, Silchar, Dibrugarh, Jorhat, Tezpur, Itanagar etc, which takes approx. minimum 12 hrs by road. Imphal is far away from Kampur that take 9 hrs 41 mins to reach by road journey, however other modes of transportation is not available in this case.

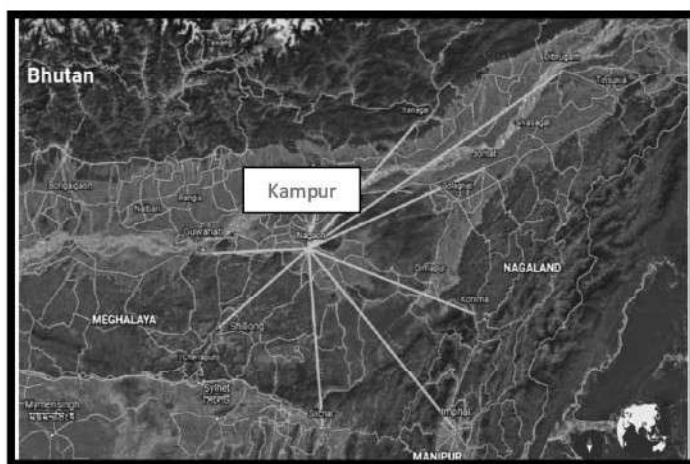


Table 25: Connectivity from Kampur to other state regions.

Connectivity from Kampur	Distance (KM)	Time (hrs.)	
		By Road	By Rail
Nagaon	28	42 mins	
Guwahati	122	2 hrs 45 mins	3 hrs
Kohima	222	5 hrs 11 mins	
Imphal	365	9 hrs 41 min	
Shillong	190	5 hrs	
Silchar	284	9 hrs 16 min	18 hrs
Dibrugarh	345	8 hrs 6 min	16 hrs
Jorhat	207	4hrs 35 min	7 hrs
Tezpur	80	1 hrs 57 min	
Itanagar	225	5 hrs 41 min	

5.2NETWORK OF ROAD:

Roads are part of urban and rural infrastructure. These roads are required for both intra-city and intercity movement and render much higher level of service compared to Regional Roads, State Highways and National Highways. Quality of life is depending on efficient and effective road system, of course, with the support of other infrastructural services such as water supply, sewerage, drainage, electricity, telephones etc. in order to perform social, economic & cultural activities.' Urban transportation network is required to facilitate movement of people and goods and therefore efficient network is necessary for their efficient movement. Importance of Urban roads is increasing on account of the fact that urban areas are increasing in their size and number.

5.3 INTERCITY CONNECTIVITY (From Kampur):

Kampur has the intercity connectivity by road as well as by rail. The table below shows to various modes of transportation and its connectivity with the nearest cities like Roha, Morigaon, Doboka, Lanka, Baithalansu, Diphu, Lawpan, Lamding, Hojai, Chaparmukh. The minimum connecting distance is 24.5 km from Raha and Doboka to Kampur and maximum is 86.4 km from Lamding. Kampur is well connected by roads. The district headquarter Nagaon city is connected with Kampur via Kathiatoli, the NH-36 connecting point at a distance of 28 km, and Kampur to Nagaon city via Barkola by the intercity road at a distance of 24 kms. Kampur town also well connected with Raha town, the NH-37 connecting point. In addition, Kampur town has various modes of transportation and its connectivity with the nearest towns like Jamunamukh, Doboka town, Raha, Kasua, Lumding Laopani, Chaparmukh, Boithalangso, Hamren, Hojai district, Lanka.

Table 26: Modes of transportation and its connectivity with the nearest cities/ towns

Urban centres from Kampur	Distance (km)	Duration (In hrs)	
		By Road	By Rail
Lumding	86.4	1 hrs 42 min	2 hrs 9 min
Lanka	49.8	1 hrs 3 min	1 hrs 9 min
Doboka	24.5	34 min	-
Hojai	42.1	1 hrs 0 min	51 min
Nagaon	24.6	44 min	-
Raha	24.5	47 min	-
Jamunamukh	15.3	33 min	41 min
Kachua	8.6	18 min	-
Laopani	11.1	19 min	-
Boithalangso	28.8	45 min	-
Hamren	51.7	1 hrs 45 min	-
Morigaon	44.8	1 hrs 18 min	-
Diphu	120	2 hrs 33 min	3 hrs 14 min
Chaparmukh	20.8	35 min	44 min

Table 27: Road Length (in Km) of Kampur M. B. Area

Total Length	Surfaced				Unsurfaced		
	Water bound macadam	Black top/Cement concrete	Paver Block Road	Total	Motorable	Non Motorable	Total
42.70	10.50	22.50	5.50	38.50	1.20	3.00	4.20

Source-Kampur Municipal Board

Table 28: Road connectivity and Distance:

Sl. No.	Road type	Connectivity	Distance
1	National Highway	Nagaon to kampur via Kathitoli	28 Km
2	State Highway-17	Kathiatoli to Kampur	8.7 km
3	State Highway-17	Kampur to Raha	24.5 km
4	State Highway-17	Kampur Town to Tengapani picnic spot via Tctclisoragaon, Tetelisoragaon	12.5 km
5	State Highway -18	Kampur to Boithangso	28.8 km
6	PWD Road	Bebejia to Kampur via Borkola	18 km
7	PWD Road/Municipal Road	Kampur Town to Ratnawali Than via Charaihagi	3.8km
8	Municipal Road	Kampur town to laopani via Amtola	26.0Km
9	Rural Road	Kampur to Jamunamukh via Bhaolbolia	15 km

5.4 OVERVIEW OF CRITICAL ROADS:

The identification of critical road links is greatly important to the management and control of the transportation system. Existing works fail to fully consider the influence of the distribution of traffic flow and its dynamic characteristics on critical road link identification.

The study of critical roads mainly depends upon several factors like traffic conditions, road geometry characteristics, environmental factors etc. Field traffic surveys were carried out to capture the classified volume count for major arterial, sub-arterial and collector roads spread across Kampur Town. Based on the field survey data and traffic volume survey conducted by the T&CP, Nagaon at some major points were ascertained during peak hours. The critical roads in Kampur town as well as the Kampur Master Plan Area is identified the State Highway -17 Kampur to Raha, Kampur to Kathiatoli, State High way -18 Kampur Boithalungsu, Kampur to Jamunamukh (Rural Road), Kampur to Bebejia via Barkola (PWD road) which are urgently need to decongest and future plan for widening and improvement to ensure free flow of traffic movement in Kampur Master Plan Area.

5.5 ANALYSIS OF TRAFFIC NODES:

The major traffic nodes in Kampur town are identified which are detailed as below

Table: 29 Major traffic nodes in Kampur town

Area	Location of point	Description
Kampur Town Area	(i) Kampur Higher Secondary Road	This is a commercial place consist of some shops, daily vegetable market and link with some educational centres through higher secondary road & entry to Kampur civil hospital, Kampur College, Offices, fire station etc.
	(ii) Kampur M.V school point.	It is also a business centre consist of variety of major shops, M.V school, Sankar Mandir, Namghar, Pubic gathering Place entry Circle Office, Kampur Municipal Board etc. also way to Jamunamukh through Balpbholia.
	(iii) Kampur Bus Syndicate	It is a fully busiest daily Market area with Gurukul Junior College, Mechanic Workshop, Garages, entry to Kampur Railway station, way to Raha, Chaparmukh etc. also way to Kachua, Baithalangso.
	(iv) Kampur Thana Road	It is an important traffic intersection and transfer point and consists of commercial and business activities. It is a place of traffic congestion with entry to some banks like State Bank of India, HDFC Bank, Central Bank of India and United Bank of India banks and entry to Kampur Stadium and some residential areas.
	(v) South Kopili Chariali	It is a commercial place comprising with Some shops, daily vegetable markets, and entry to some residential area like Uttar Changchoki, Dakshin Changchowki in the east and Ghilani, Charaihagi and Ratnawali than in the west and way to Kochua and Boithalangs.

5.5.1BUS TERMINUS:

Public and Private Bus stands are most temporarily located at some busy road sides of Kampur town which causes the traffic congestion and traffic hindrance. The bus stands located at different places of the town and their characteristics are as given below.

Table: 30 Characteristics of Public and Private Bus stands of Kampur town

Terminal Centre	Location	Observation
A. Inter-City	Bus Station	
!. Passenger	i) Kampur - Raha, Kachua and Baithalangso Bus Syndicate	Located near Kampur Railway Station area. Parking space is not sufficient. Waiting shed, toilet facilities should be extended. Passenger's guest house facilities should be provided.
	ii) Kampur Bus Syndicate	Very congested. Parking space is very narrow. Waiting shed and toilet facilities are nil. Immediately this bus station should be shifted.

	iii) Kampur - Nagaon Mini Bus Station (near Kampur Railway Crossing gate)	Located at Kampur Main Bazar area. Campus of the Bus station is very narrow, so all the necessary facilities should be improved providing modern technology through proper planning. Waiting shed and toilet facilities are nil. Road side parking.
	iv)Kampur- Jamunamukkh Bus Station (near Kampur Railway Crossing gate)	Very congested. Unplanned. Always overcrowded. No waiting shed. Toilet facilities are very negligible. Road side parking.
	v) Kampur - Kathiatoli Tempo/ Magic syndicate	Very congested. Unplanned. Always overcrowded. No waiting shed and no toilet facilities.
	vi) Kampur - Nagaon, Kampur- Kathiatoli, Kampur- Kachua Mini bus stand (Near Murgi Bazar)	Most temporary, unplanned and always overcrowded. No waiting shed and no toilet facilities.

5.5.2 Railway:

Kampur is connected by Indian Railways network. There are several trains plying from Guwahati Railway Stations and passes through Kampur to upper Assam. The North - East Frontier Railway Broad Gauge Line from lower Assam to Upper Assam connects Kampur to the rest of the other places. There is the stoppage of so many important trains at Kampur Railway Station i. e. Rajthani Express, Brahmaputra Mail, Avadh Assam etc. Nagaon Railway Station, Hojai Railway are the nearest railway station to Kampur Railway Station and Chaparmukh Railway Junction is the only nearest junction to Kampur Railway station. There is no any direct train running from Kampur Railway Station to the rest of others. At present, electrification network with dual track of whole North-East Frontier Railway is under progress under Ministry of Indian Railways, Govt. of India.

Table: 31 Characteristics of Kampur Railway Station

RAILWAY STATIONS		
Passenger	i) Kampur Railway station	The existing platform should be upgraded and waiting shed should be extended. Guest house facilities should be established. Toilet and sanitation facilities are not sufficient to the need of the people. Booking and Reservation Counters should be opened. The platform is required to be upgraded providing all modern facilities. Guest house facilities should be established.

5.6 TRAFFIC VOLUME SURVEY:

The traffic volume survey conducted by the T&CP, Nagaon only at some main points and it is restricted only to peak hour survey from 08:00 a.m. to 10:00 a.m. 11:00 A.M to 12:00 P.M, 12:00 P.M. to 01:00 P.M. identify better and efficient traffic operation plan. The following table shows the traffic volume of the main points within Kampur Master Plan.

Table: 32 MAIN BAZAR POLICE POINT

Sl. No.	Vehicle	Number	Time
1	Bus	07	11:00 A.M
2	Tempo	15	
3	Rickshaw	04	
4	Thela	07	
5	Bicycle	45	
6	Truck	06	
7	J.C.B	01	
8	Bike	74	
9	Tractor	01	
10	Car	38	
11	E- Rickshaw	33	
12	Magic	13	
13	Tata Mobile	22	
14	Soil Truck	03	

Table: 33 KAMPUR TOWN M.V. SCHOOL POINT

Sl. No.	Vehicle	Number	Time
1	E- Rickshaw	23	12:00 P.M
2	Tempo	16	
3	Rickshaw	07	
4	Thela	08	
5	Bicycle	41	
6	Truck	02	
7	J.C.B	01	
8	Bike	67	
9	Car	34	
10	Magic	11	
11	Tata Mobile	26	

Table: 34 KOPILI BRIDGE APPROACH POINT

Sl. No.	Vehicle	Number	Time
1	E- Rickshaw	22	01:00 P.M.
2	Tempo	16	
3	Rickshaw	08	
4	Thela	09	
5	Bicycle	38	
6	Truck	06	
7	J.C.B	01	
8	Bike	70	
9	Car	25	
10	Magic	10	
11	Tata Mobile	14	
12	Soil Truck	05	
13	Tractor	02	
14	Dumper	04	
15	Bus	02	

Table:35 KAMPUR OLD BUS SYNDICATE POINT

Sl. No.	Vehicle	Number	Time
1	E- Rickshaw	24	01:00 P.M.
2	Tempo	18	
3	Rickshaw	08	
4	Thela	07	
5	Bicycle	17	
6	Truck	04	
7	J.C.B	01	
8	Bike	66	
9	Car	28	
10	Magic	12	
11	Tata Mobile	13	
12	Soil Truck	04	
13	Tractor	01	
14	Dumper	02	
15	Bus	02	

Table: 36 KAMPUR HIGHER SECONDARY SCHOOL APPROACH POINT

Sl. No.	Vehicle	Number	Time
1	E- Rickshaw	40	01:00 P.M.
2	Rickshaw	09	
3	Thela	03	
4	Bicycle	21	
5	Truck	04	
6	Bike	33	
7	Car	25	
8	Magic	04	
9	Tata Mobile	04	
10	Tractor	01	
11	Dumper	01	

Source-Survey conducted by T&CP, Nagaon

5.7 PARKING:

Vehicle parking is a major problem in urban areas. With rapid growth of the urban area, the parking generation rate goes on increasing very quickly which creates major problems of parking in most of the urban areas. In the recent years, with the rapid development of economy and exorbitant increase in the motor-vehicles, parking problems in urban area have become increasingly prominent.

On street parking is found all over Kampur Town, parking usually spills over to other use areas like road carriageway and footpaths, open spaces. In turn they affect safety and environmental quality. Parking characteristics within the town vary by areas, by land use activities and by time period. In residential areas it is by time period.

At present there is no municipal identified parking area designated for public and private parking within Kampur town as well as Planning Area. As per parking survey conducted by the Town and Country Planning, Nagaon it is observed that on street parking is found all over Kampur town. On- Street parking is observed to be high on Kampur Bazar Road, Kampur M.V. School point, both side of the Main Road of Kampur Town. On street parking at different places of Kampur town are observed as below:



On street parking



Kampur M.V. School Road

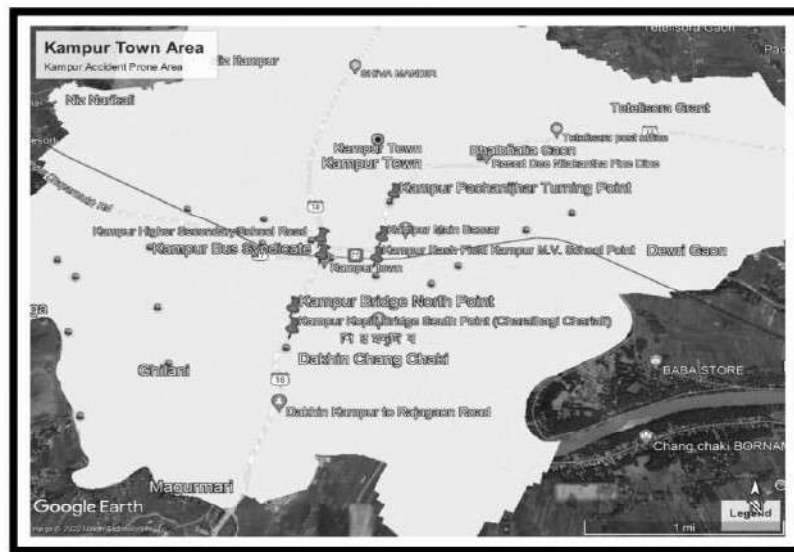


Near Kampur Railway Station

5.8 MAJOR ACCIDENT-PRONE AREA:

As per records available from the Kampur Municipal Board, there are frequent accidents are being happened in Kampur Town due to non-traffic signal points and uncontrolled speed of the vehicles. Major accident-prone areas of Kampur town are mentioned as below:

1. Pachanijhar Turning Point
 2. Kopili Bridge South and North Point
 3. Kampur Main Bazaar
 4. Kampur Rash field and Kampur M.V. School Point
- Kampur Bus Syndicate Point
Kampur Higher Secondary School Road



Map of accident-prone Area of KMB Area

5.9 TRANSPORTATION ISSUES AND REQUIREMENTS:

5.9.1 ILLEGAL VENDING ZONE:

- One of the major issues is of illegal vending on walking shoulders on the main streets.
- Due to illegal vending sometimes the actual accessible patch of road decrease to half lane only.
- If proper spaces are being allocated to street vendors in every zone the issue can be eliminated.
- Due to illegal possession of shoulders the pedestrian come down to road for their local trip and sometime proves unsafe on congested area.
- Narrow road network with restricted capacity, particularly due to the illegal vending, resulting in congestion and loss of productivity.
- The problematic areas include intersection Kampur Thana Road, Kampur Main bazaar road, Kampur Rail crossing Area have this illegal vending.

The photographs below depict the current scenario of the illegal vending zones which restricted the capacity of road resulting lead to congestion.

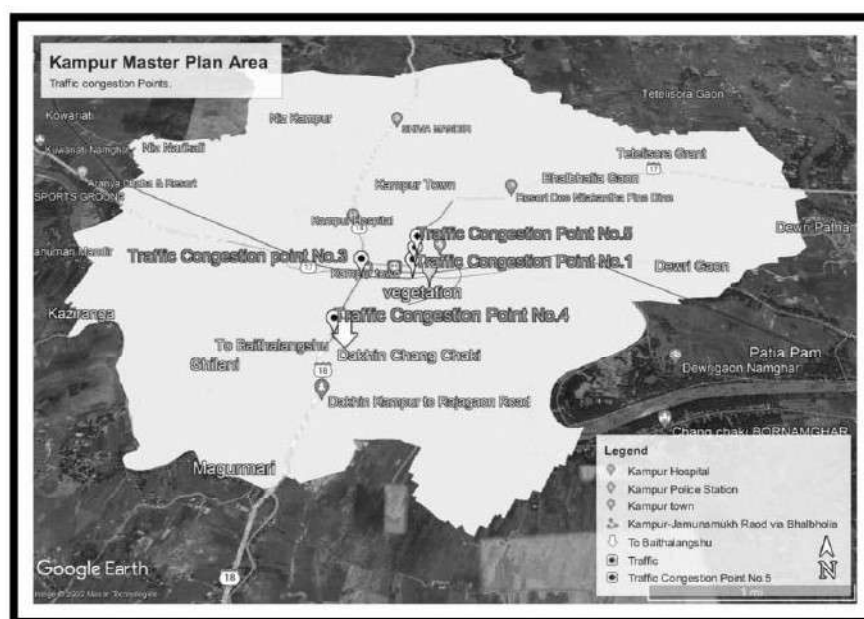
Therefore, to reduce traffic congestion in Kampur Town 1 No. (one) of vending zone has been proposed at Ward No-VIII in the main market area.



Illegal vending zone in kampur own

5.9.2TRAFFIC CONGESTION:

- Traffic congestion is quite common in Kampur Town and it takes a lot of time to commute for the commuters.
 - At many places geometry of the town is very less as they have not followed any norms and standards for the road pattern as well as for other related things like road cross sections and railway level crossing etc.
 - Observed encroachments on the footpath by vendors, which acutely rise the traffic congestion between include intersection Kampur Thana Road, Kampur Main bazar road, Kampur Rail crossing Area have this illegal vending and parking on both sides of the road and the resultant traffic need to resolve.
 - Many vehicles, due to lack of adequate parking facilities, were parked on the Kampur Town bazaar road, causing inconvenience to people who use the field for recreational purpose like walking and playing and people had to face inconvenience as that road leads to many importance places like Kampur Higher Secondary School, Police Thana.
- The highlighted light green dots on map within town area shows the frequent congested road patches.



5.10 ROAD ENCROACHMENTS:

- Many factors can be listed out for such happenings, but few observations are mentioned below, which are
- Unauthorized parking of vehicle on pavement only.
- Many spots with exposed electric poles on pavement sides which leads to make space dead and potential for parking wheels.
- The town suffers from parking problems due to encroachment by vendors on road and off-street parking. As a result, the road width decreases and there is no space remaining to pass the vehicles or to give space to other vehicles.
- There is no designated space for parking in whole town,
- There are encroachment issues in areas namely both sides Kampur Thana Road, Kampur Main bazaar road, Kampur Rail crossing road.
- Due to lack of space, it is difficult for vehicles to pass on.
- Also, Proper facilities are needed for loading, uplifting, and downloading.
- Encroachment on both sides of the road decreases the effective width which may cause road accidents and disturbs the smooth flow of traffic.

5.11 TRAFFIC SIGNAL POINTS:

There are no organized traffic signal points in Kampur town. Various junctions without traffic signals are there in the town area like- Kampur Higher Secondary Road, Kampur M.V school point, Kampur Bus Syndicate, Kampur Thana Road, South Kopili Chariali etc. resulting in unnecessary traffic jams and more requirement of traffic brigade occurs.

CHAPTER 6:**INFRASTRUCTURE, PUBLIC UTILITIES & SERVICES**

The development pressure on towns and cities is increasing with the rising urban population and growth of urban areas. The development of cities in itself is dependent upon the public infrastructure services. The creation of urban infrastructure is expensive and time consuming. Therefore, it requires the Government to play a major role in making lumpy investments.

A country's economic and social development is directly dependent on a country's infrastructure. Many developed countries make a lot of progress because of the enormous growth of economic and social infrastructures. A good infrastructure makes the work process easier, resulting in a positive and high productivity.

Urban infrastructure development is the foundation of every city and remains the key to ensuring basic services like water, sanitation, drainage, energy, and transport. With proper and planned urban infrastructure development, residents can enjoy better living conditions & live healthier lifestyles while benefiting from enhanced environmental sustainability.

Social Infrastructure is a subset of the infrastructure sector and typically includes assets that accommodate social services like Health, Education, Housing, Civic and utilities, Transports etc.

6.1 SOCIAL INFRASTRUCTURE:

Social infrastructure plays an important role to provide quality of life to the residents of the city. The effectiveness of social infrastructure in achieving the objective of city development plan would depend upon its capacity to contribute to improvement in the quality of life, enhanced self-dependency and city's sustainability. The level of social infrastructure shall aim the creation of liveable city through reducing the sense of alienation among the residents with less dependence on other settlements for basic infrastructure.

Social infrastructure refers to the facilities and mechanisms that ensure education, health care, community development, and social security, recreational and social welfare. The development cannot be looked at in isolation without considering the basic needs of the people, and a significant level of investment is needed in this sector. Usually, this development referred to as the commitment towards realizing the vision of the city.

6.1.1 EDUCATION

Education is an important factor influencing the quality of life of the people and future development of an area. It empowers them with skills and knowledge and helps them to better lead their life and access best of the employment opportunities available in the market. This in turn will impact the work force participation rate and economy of the area. There are many government and private schools, colleges in Kampur town. The existing scenario of Primary, Middle school and Higher secondary school and Govt. and private Colleges in Kampur area is shown in the table given below:

Table 37: Educational Facilities available in Kampur Master Plan Area

Sl. No.	Category of Educational Institutions	Institutions in KMB Area	Institutions in Village Area	Total Number of Institutions	Enrolment	Teachers
1	Lower Primary Schools	11	19	30	2550	85
2	Middle School	8	3	11	660	35
3	High School	2	5	7	2070	125
4	Higher Secondary School	3	Nil	3	960	102
	1) Kampur College	1	Nil	1	632	24
	2) Junior Colleges	3	Nil	3	1059	61
	3) B.Ed College	Nil	Nil	-	-	-
	4) Commerce College	Nil	Nil	-	-	-
	5) Law College	Nil	Nil	-	-	-
	6) Homeopathic	Nil	Nil	-	-	-
	7) Polytechnic	Nil	Nil	-	-	-
	8) I.T.I	Nil	Nil	-	-	-

Source: Inspector of Schools, Elementary and Higher education



Kampur College



Kampur H.S & M.P school

6.1.2 HEALTH:

The medical facilities in Kampur town is not sufficient to the needs of the demand of the peoples. Kampur F.R.U. 30 beds civil hospital including maternity section have been providing the medical facilities to the peoples of Kampur area. In addition to the Kampur F.R.U. there is an urban health centre namely Bodulal Charitable Hospital and a dispensary within Kampur Master Plan Area. There is no any private nursing home in Kampur. Therefore Kampur F.R.U. Hospital is always over crowded with patient and needs its immediate expansion.



Kampur F. R. U.



Bodulal Charitable Hospital

6.1.3 WATER SUPPLY:

In Kampur town, piped water is supplied to a section of the people by PHE Deptt, Nagaon and rest of the population depends upon individual source of water like ponds, ring wells and tube wells. The underground water reserve of the town is in a satisfactory condition hence it is felt that there will not be shortage of water for distribution in the town. Besides this Kapili river is passes near the town from which water can be trapped for distribution if required in future for the projected population.

At present there are about 125 to 130 households are water supply connection within Kampur Municipal Area and about 20 Nos. of Water supply public tap stand in the Town.

6.1.4 POLICE STATIONS:

The whole Kampur Master plan Area is controlled by Kampur police station which is located in the heart of the Kampur town.



Kampur Police Station

6.2 TRADE AND COMMERCE:

The Commercial activities in Kampur Town have not been growing like other towns of Nagaon District. As per data available from the Kampur Municipal Board the total No. of retail shops in the Town Area is 217 units and 14 No. of wholesale units.

There are 2 (Two) daily markets in the town and 1 (One) is weekly market on Friday in the Kampur main bazar area. Following table depicts the commercial activities in Kampur Town.

Table 38: Data regarding Trade and Commerce within Kampur Municipal Area:

Sl. No	Type of business Units	Nos. of business Units	
		Wholesale	Retail sale
1	Grocery	6	69
2	Cloth		32
3	Medicine	2	14
4	Cycle shop	-	6
5	Hardware(cement dealer)	-	1
6	Electrical shop	-	15
7	Radio & T.V	-	2
8	Fruit shops	1	6

9	Egg shop	2	5
10	Jeweller	-	14
11	Hardware	-	10
12	Rice	2	1
13	Motor tyre dealer	-	2
14	Fertilizer	1	2
15	Optical shop	--	1
16	Meat shop	-	7
17	Timbers	-	3
18	Radio & Sewing machine	-	16
19	Diary	-	2
20	Scooter & Motor cycle dealer	-	5
21	Book stall	-	4

Source-Kampur M.B

6.2.1 CREMATION /BURIAL GROUND:

There are 10 (Ten) cremation grounds and 2 (Two) burial grounds within Kampur Master Plan Area- which are shown in the **table below No 39:**

Sl. No.	Location	Number of Cremation Ground	Number of Burial Ground
1	Kampur Town	1	1
2	Major aati	1	Nil
3	Paliguri	1	Nil
4	Ghilani	1	1
5	Tetelisara Gaon	1	Nil
6	Dakshinpat	1	Nil
7	Niz Kampur	3	Nil
8	Bhalbhalia Gaon	2	Nil

Source:- Kampur Municipal Board

The existing cremation and burial grounds should be developed with the basic facilities like roads, waiting shed, water supply, electricity and drainage etc.

6.2.2 FIRE STATION / FIRE HYDRANTS:

The entire Kampur Master Plan Area is covered by one fire station located near Kampur College to take care of fire hazards. Therefore, Alternative solutions of use of smaller **fire hydrants** for very narrow roads, Market Area, highly populated Area etc. for fire safety.

A **fire hydrant** is a connection point by which fire fighters can tap into a water supply. It is a component of active fire protection.

Strategies for Fire Hydrant Installation Point

- ☐ Hydrants must be located within three feet of the edge of a fire lane and cannot be located in areas where it may be visually or operationally obstructed (behind fences, walls, in bushes, behind parking spaces, etc.). Clearance shall be provided to a distance no less than three feet from the perimeter of the hydrant.
- ☐ The hydrant outlets must face the fire lane. In areas where the outlets cannot face the fire lane (e.g., the hydrant is located on a landscape peninsula or island in a parking lot; the hydrant has three outlets, etc.), the 4" outlet(s) shall take precedence
- ☐ The hydrant shall be located at least 40-feet from the building it serves. Where it is impractical to locate the hydrant 40-feet from adjacent structures, additional hydrants may be provided, or the hydrant may be located closer if nearby walls do not contain openings and the hydrant is not in a location where it may be rendered inoperable due to damage from collapsed walls, debris, or excessive heat.
- ☐ The concerned agencies shall take approval from Fire Department for firefighting measures while laying the services for an area.

Proposals for location points of Fire Hydrant in Kampur Master Plan Area

For fire safety measures in Kampur⁵ (five) Fire Hydrant installation point has been proposed at Ward No.- II, Ward No.- II (Near Railway Station), Ward No.- VII, Ward No.-VIII and Ward No.- X.



Kampur Fire Station

6.2.3 POST OFFICE:

There are 2(two) post office within Kampur Master Plan area, one is within Kampur Municipal Area and the another is outside Municipal Area which is not sufficient to meet the need of the demand of the peoples.

6.2.4BANKS/FINANCIAL INSTITUTIONS:

The entire planning area is served by 7 nos. and these are all located at Kampur Master Plan Area. The banks located within the planning area are shown in the table below:

Table 40: Banks in Kampur Municipal Area:

Sl. No.	Name of Banks	No. of banks
1	Punjab National Bank	1
2	State Bank of India	1
3	HDFC bank	1
4	Central Bank of India	1
5	Assam Gramin Vikash Bank	1
6	North East Bank	1
7	Bandhan Bank	1

6.3 RECREATIONAL FACILITIES:

The Following table depicts the available of recreational facilities in the Kampur Municipal Area as well as the Planning Area.

Table 41: Recreational facilities within Kampur Master Plan Area

Sl. No.	Recreational facilities	Nos. along with Name and Location
1	Parks	(a) Thana Road (b) Burapatiagaon
2	Playground	(a) Central Sports Field Kampur (b) Kampur H.S School (c) Kampur Adarsh School
3	Stadium	Central Sports Field, Kampur
4	Library	(a) Sahitya Sabha Bhawan
5	Museum	--
6	Cremation Ground/Burial Ground	(a) Thana Road/Jn. (b) Parliguri
7	Cinema Hall	---
8	Public Auditorium	(a) Swaraj Bhawan
9	Swimming Pool	---

Source: Kampur Municipal Board

6.3.1 DRAINAGE SYSTEM:

With the rapid urbanization as well as the expansion of the area of Kampur town, the existing drainage facilities are not sufficient to the needs of the demand of the people. Most of the new residential areas have grown without having drainage facilities. The existing drains both side of the road do not have proper slopes or not properly linked up with the main drains and the alignments of the natural drains are also not properly defined, resulting in water logging at different areas of the town, mainly during the heavy rainy season (June to October) most of the busy roads in the residential area of Kampur town is inundate with the stagnation of rain water.

As the Kapili River passes near the Kampur town, a major part of the storm water generated in the town flowed out to the Kapili River. During the rainy season when the Kapili River is increase in volume than it is not in a position to discharge the rain water and consequently all the low-lying areas within the town causing flood.

6.3.2 SEWERAGE SYSTEM:

At present there is no sewerage system in Kampur town as well as in the planning area. The mode of disposal is through the septic tanks with soak pits arrangement. Most of the family's day to day washables dirty water and the bathroom water is disposes in own soak pits. Some of the family's washable water discharge is into the open municipal drains. Almost all the holdings in the town have individual septic tank. There are no dry latrines.

6.3.3 STORM WATER DRAINAGE:

The existing natural storm water drains in Kampur town are not properly defined and is slow being encroached by the growing population. Presently road side drain carries the rain water. Below table shows the length of drains.

Table 42: Storm water Drain/Drain (In Km)

	Total Length	Pucca Drain	Kutchra Drain
Storm water Drain	NA	NA	NA
Drain	2.90	1.15	1.75

Source: Kampur Municipal Board

6.4 SOLID-WASTE MANAGEMENT:

The collecting, treating, and disposing of solid material that is discarded because it has served its purpose or is no longer useful. Improper disposal of municipal solid waste can create. Unsanitary conditions, and these conditions in turn can lead to pollution of the environment and to outbreaks of vector-borne disease—that is, diseases spread by rodents and insects.

The tasks of solid-waste management present complex technical challenges. They also pose a wide variety of administrative, economic, and social problems that must be managed and solved.

The management of municipal solid waste is one of the main functions of all Urban Local Bodies (ULBs) in the country. All ULBs are required to meticulously plan, implement and monitor all systems of urban service delivery especially that of municipal solid waste. With limited financial resources, technical capacities and land availability, urban local bodies are constantly striving to meet this challenge.

As per data received from Kampur Municipality Board total waste generated per day in Kampur town is approximately 2-2.5 metric tons and collects about 1.5 tons (60%) from various source like households, commercial establishments, hotel, marketplace, drain cleaning and street sweeping, construction waste etc. Presently, following table depicts the nos. of vehicles and other equipment's used for solid waste management system by the Kampur Municipality Board.

Table 43: Vehicles and other equipment are used for solid waste management system.

Sl. No.	ITEM	NUMBER
1	Roller	1
2	Tractor	1
3	Tempo van	1
4	Rog Machine	1
5	Tripper	2
6	Mini JCB	1
7	Water tank	2
8	Hydraulic Dustbin	2
9	JCB (Big)	1
10	Safai Kormosari	11

Source-Census of India

CHAPTER 7:

ENVIRONMENT AND CITY BEUTIFICATION PLAN

7.1 Description of eco-friendly areas like water bodies; beels; forests; and also heritage areas:

7.1.1 ECO-FRIENDLY AREAS OF KAMPUR:

Kopili River: -The River Kopili is one of the important major tributaries of the Brahmaputra on its left bank. It originates from the Saipong Reserve Forest situated in south east of Meghalaya and passes through the borders of Meghalaya, North Cachar hills and Karbi Anglong and enters the plains in Nagaon district of Assam and finally joins the Brahmaputra at Kopilimukh. Its total length is 256 km of which 78 km from the common border of Meghalaya and Assam and the remaining 178 km lie in Assam.

Kopili River is an interstate river in Northeast India that flows through the states of Meghalaya and Assam and is the largest south bank tributary of the Brahmaputra in Assam. The river Kopili rises in the North Cachar Hills District in Borail Range at an altitude of 1525 meter. Then it passes through Kopili Ghat, Penumbra, Kheroni, Rajagoan, Kampur, Amsoi, Kumoi, and Mayang.

The Kopili Hydro Electric Project, located across the districts of Dima Hasao in Assam and Jaintia Hills in Meghalaya and run by the North Eastern Electric Power Corporation, consists of the Khandong and Umrongso dams and their reservoirs and three power houses that have a total installed capacity of 275 MW.



River Kopili

Issues:

(a) Dam induced Flood: - Kampur is one of the towns located in the down streams of Kapili Dam. Dam induced flood is major problems for the people living in downstream areas. The kapili dam has changed the character of flood in the river downstream for the worse. Before the construction of kopili dam, floods occurred mainly during the monsoon season. Increase in water volume due to heavy rains used to be the reason of flood. These were normal flood which occurred not more than two or three times a year. But after the construction of Dam of Dam, number of artificial floods occurring in a year has gone up to 5-6 times.

(b) Acid contamination due to open cast mining threatens viability of lower Kopili:-The identified acid mine discharge in the upper reaches of the kopili catchment is posing serious threats to the existing Kopili HEC and also reported to cause constant erosion/corrosion of the critical HEP. Moreover, open cast mining is such that no living organisms could be found in the downstream of Kopili River up to Kheroni. The Ph value of the water has come down from 5.5 to 3.2 due to acidic contamination which is unfit for human consumption.

(c) Ground water depletion in downstream areas: - People in the downstream of kopili river areas like Kheroni, Kampur, Chaparmukh, it was reported that there has been depletion of ground water and at certain areas had reduced to 140 ft. Rivers like Nisari (Hariya), Borapani, kopili itself dry up in the winters affecting the winter cultivation. Besides, wetlands which are known as Beel or Duba locally have disappeared. The reduction in the ground water can also be due to reduced ground water recharge due to the dam.

(d) Environmental issues: -The Kopili has as many as 54 species of fish in it. Unscientific opencast coal mining in the Kopili's upper reaches in Meghalaya has led to acidification of the river which has in turn left part of the river's course biologically dead, making the water unfit for human consumption and has led to frequent outages at the Kopili Hydro Electric Project's power stations. The 275 MW Kopili Dam Power House of NEEPCO (North Eastern Electric Power Corporation Limited) in Assam suffered major disaster on 7 Oct 2019.

This river is also facing a tremendous pollution threat from its riparian areas, especially in its upper stretches due to anthropogenic activities. The Central Pollution Control Board (CPCB) in one of its reports has placed the Kopili river in 4th rank among the 56 most polluted river of North-East region.

7.2 IMPACT ASSESSMENT AND STRATEGIES:

(a) The EIA should do a detail assessment of impacts of peaking power operation during non-

monsoon months. Due to peaking power generation in non-monsoon months the river stretches downstream from power house will have very little water for most hours of a day with sudden flows in the river only for few hours. This flow fluctuation leads to many severe impacts including on aquatic bio-diversity, on safety, on river bed cultivation, on erosion, among others. This has severe socio-economic impacts along with issues of safety of the people and their livestock in this stretch of the river. Therefore, the EIA should do a detailed assessment of impacts of peaking power generations.

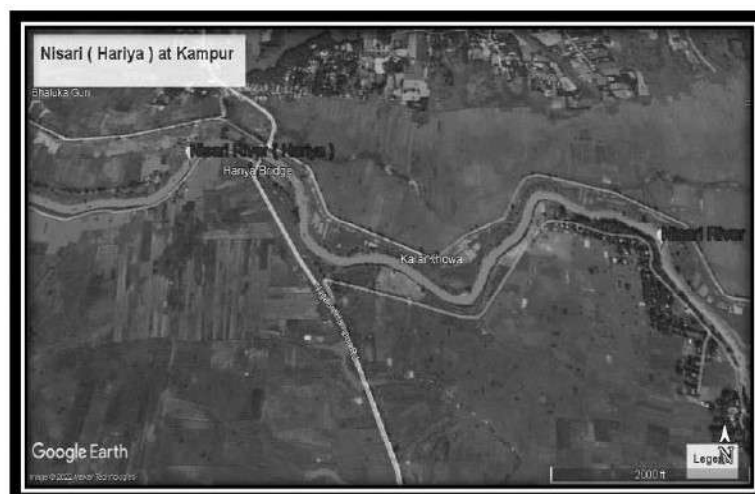
(b) The Environment Impact Assessment should be done to assessment to prepare an optimum reservoir operations plan for the project in order to minimize the downstream impacts if a disaster occurs. It is also highly recommended that the local people should be made part of the reservoir operations process. Then only the dam authorities can be expected to be more responsible to in reservoir operations.

(c) There should be a detail analysis on the impact of changing silt flows downstream from de-silting chamber, from silt flushing in monsoon, on the downstream areas. And also detailed account of how the silt from the dam will be flushed out annually and what will be the impact of this in the downstream.

(d) There should be an assessment regarding impacts of tunnelling and blasting as these activities can increase in risk of landslide and disaster in a hilly track.

(e) Environment impact Assessment also includes a study on the impacts of mining on the people as well on the local environment and thorough analysis regarding ground water depletion and existing wetlands, watercourses and other water bodies in the region. Necessary steps should be taken for the management and conservation of the wetlands, Beel, etc so that degradation of the bio-diversity can be controlled.

1) Nisari River (Hariya): - Another important river flows through northern side of the Kampur Town is comparatively smaller than Kopili River. This River is also locally known as Hariya. River is rich in aquatic living organism there for is a ground of fishing centre for the common people. Like the Kapili River, Nisara River also over flooded during the time of Monsoon and created flood on the southern area of Kampur but it makes the soil fertile. Water of River Nisara is used in irrigation for the cultivation different crops specially Paddy cultivation surrounding the drainage basin. Local fish found in the river are Sal, Barali, Bahu, Kuchia, Rahu, Bhakua etc. There are so many temporaries are as well as permanent Fish market were found on the ghats of the river, which provides livelihood to the people of the Area.



Hariya River

Moreover, there are also many small Marshy areas found in the Kampur Planning area both free and water logged which has its own unique ecosystem and rich in aquatic living being. These areas are often dominated by grasses, rushes or reeds provide habitats for many kinds of invertebrates, fish, amphibians and aquatic mammals.

On the southern skirts of Kampur Planning area, there so many small and big sizes artificial ponds or fisheries which are used as fish farming. The fishery sector with commercial purpose contributes considerable percent to the state Gross domestic Products. It provides livelihood to the people and boast the state economic development. Therefore, fish farming with other allied culture in a scientific way should en encouraged in the Planning area, so that it can provide livelihood to the people and economic development. Another small river “Magurmari” flows therein, which makes the southern Boundary of the Kampur Planning area.



Magurmari Beel

7.3 ECO-SENSITIVE AREA:

Eco-Sensitive Zones (ESZs) or Ecologically Fragile Areas (EFAs) are areas in India notified by the Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India around Protected Areas, National Parks and Wildlife Sanctuaries. The purpose of declaring ESZs is to create some kind of "shock absorbers" to the protected areas by regulating and managing the activities around such areas. They also act as a transition zone from areas of high protection to areas involving lesser protection.

(a) Dighali Beel:

The Dighali Beel is an ideal freshwater ecosystem containing both organic and inorganic materials located in Kampur Circle of Nagaon District in the State of Assam in. It is governed by Bagalajan Gram Panchayat. It comes under Kapili (part) Community Development Block. The nearest town is Kampur Town, which is about 12 Kilometres away from Dighali Beel. Total area of Dighali Bil is 25 Sq. Km as per the data available. In context to Kampur Master Plan area it is located towards the North-western side of Master Plan area and a only some portion of the bill fall within the Master Plan boundary. The Bill is very rich in aquatic living organism and a rich bio-diversity. The beel is endowed with rich floral and faunal diversity. In addition to these, huge congregation of residential water birds, seasonal migratory Birds, etc.

The water body is perennial. In recent time, some portion of land use changes takes place due to illegal encroachment of land for agricultural purpose. The fringe area of the Beel is used for paddy and other crop production. As soon as the flood water recedes the fertile banks becomes ready for the cultivation of paddy.

7.4 OTHER WET LANDS OR WATER BODIES:

Moreover, there are several water bodies and wetland rich are Aquatic Living beings within the Kampur planning area which are to Manage, conserve and preserve. They are (a) Ahom gaon pitani (1 Sq Km), Kathar Dolong beel water body (1/2 Sq.km), Bamun Dolong Beel, (1 Hectare), Saru Buklong (4 Hectare), Bor Kasupit (3 Hectare), Saru Kasupit (2 Hectare), Saleku (3 Hactare) etc

7.5 BIODIVERSITY OF THE DIGHALI BEEL:

Flora: Various types of flora and fauna are found in Dighali Beel. Beel is rich in floral diversity. Some of the flora found were Bih Mateka, Dal Ghah, Boss, Jora, Kola kochu, Mati Kanduri, kalmou, sorupani, Pani meteka, Pani lokosi, Bhet, Bihlongoni etc.

Fauna: Dighali Beel is rich in faunal diversity include various types of aquatic birds and fishes. But due to several anthropogenic activities create threat to reduce these diversities. Dominant aquatic birds found were Sarali hah, Samukvanga, Bogoli, Dolghora, Pani Kauri, Dawk, Dolmoura, Dhak and seasonal migratory birds. Common fishes found in the beel were puthi, Mao, Daikana, Singi, Sal, Soul, cuchia, Borali, Dhekera etc.

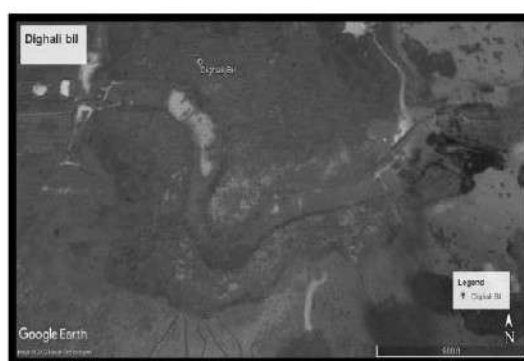
Issues:

Loss in aquatic Biodiversity: Basically, the beel is the home of various fauna and flora. Due to more human encroachment mainly for agricultural purpose using fertilizers, the quality of the water body starts to degrade which leads to decrease aquatic floras and faunas.

Extraction of fishes and Birds: Extraction of fishes and illegal poaching of birds from it also increasing in present day. It harms the local fish species and extinction of some local species. In recent days due to illegal poaching of birds hamper the attraction of the water body for the migratory birds which are now decreasing day by day due to human presence and loss of natural vegetation. There is no doubt that Dighali beel has every possibility to develop a site of recreation where people can enjoy the natural beauties and refresh themselves.

7.6 REQUIREMENTS:

For wise use of water body resources, it is very important to assess the impact of socio-economic factors upon the water body environment in regards of management plan. For proper management resources several steps should be taken to protect the water body from encroachment and strict law should be implemented for their protection to illegal encroachment. Alternative means of livelihood should be generated for the people who depend upon water body resources for their survival. It will reduce the exploitation of water body resources and killing of fish and fauna. Efforts should be made to educate the local people and create awareness about the importance of management and conservation of this water body. Successful management of water body resources depends upon how properly concern authorities adopt appropriate plan and in what way it should be implemented.



Dighali Beel

7.6.1 Historical sites or Heritage Place:

A historic site or heritage site is an official location where pieces of political, military, cultural, or social history have been preserved due to their cultural heritage value. Historic sites are usually protected by law, and many have been recognized with the official national historic site status. A historic site may be any building, landscape, site or structure that is of local, regional, or national significance. Usually this also means the site must be at least 50 years or older. In Kampur town and its surrounding area, there are so many places having historical importance and significance. Among them are Ratnawani Than, Shri Shri Madhab Than, Ghilani Jame Mazjid, Maya Mora Dinjoy Namghar etc.

7.6.2 Regional Level Heritage:

Conservation of Buildings, Artefacts, structures, areas, and Precincts of Historic, aesthetic, architectural, cultural significance will fall under the norms prescribed by the ASI, would need redevelopment and redesign without hampering the fabric of area. Following is the tangible and intangible identified heritage site which falls under the regional and local context.

(i) **Ratnawali Than:** Kampur Town is located about 28 km southwest of Nagaon City. Deb Narikali is a village located on the south bank of the river Kapili, about four Kilometres west of this Kampur town. In the eastern part of Dev Narikali (now known as Ghilani) near the river Kapili, this majestic Ratnawali Than is located. Dev Narikoli village has a unique history. This village is a famous village among all the villages surrounding whole Kampur region. It has divided into two parts. Niz Narikoli is the name given to the village about 2 miles north of river Kalpili and southern bank situated side village is call Dev Karikoli.

Most of the people of Dev Narikoli were came from the Upper side to settle on the bank of river Kapili at the time of Maan Bhagon. During the time of Moamoria revolt, the son and wife of the Dihingya Satra Satradhikar Shri Shri Brajwamohan Devgoswami, while coming to Harimukh ghat with boat unknowingly reached the Ghat of Dev Narikoli on the bank of River Kapili. They came to this new place due to the sudden shock of the moamoria revolt and settled down on the Dev Narikali Kapili River bank where they meet some disciple and, on their request, they settled there for more days and in course of time the place came to known as “Than”. The mother that means the wife of Satradhikar Brajwamohan Devgoswamy, temporally placed the Bhakti Ratnawali for worshipping under the roof built with straw constructed by the disciple. The Great Assamese Saint “Shri Shri Madhab Deva” Wrote book “Ratnawali” placed there for worshipping, therefore the “Than” came to known as present day Ratnawali Than.



Ratnawali Than

(ii) **Shri Shri Madhab Than:** “Shri Shri Madhab Than” is situated in the centre of Assam in the district of Nagaon with prominence amongst pilgrims. Sri Sri Madhab than is a holy place and a pilgrim centre which is dedicated to Lord Krishna. It is located at a distance of 14 Km from the Kampur main town. Though it is falls outside the Kampur Master Plan Area, it has historical and religious importance. The temple is an important place where Madhavdeb, the preceptor of the Ekasarana Dharma or Shelter in one religion followed the same. He was great devotee and follower of the renowned saint Srimanta Sankardev.



Shri Shri Madhab Than

Issues:

(a) Dilapidated condition of structure: - Most of the Heritage Structure are in dilapidated condition due to the unavailability of conservation, restoration and preservation practices in Kampur Area. These structures need periodic preservatory treatments in order to enhance their cultural life for coming generations.

(b)Unavailability of infrastructure and services: There is an absolute absence of proper infrastructures and services in the immediate areas around the possible heritage as well as tourist spots of Nagaon. The basic amenities also lack at these places which have to be planned accordingly.

Absence of Monitoring: There is no nodal body responsible for periodic monitoring of the heritage structure around Kampur. Such nodal bodies are to be constituted in order to provide proper jurisdiction to such capable heritage areas so that there's no threat to them in future.

Lack of awareness among Public: The Citizens are unaware about the cultural assets owned by them and they are to be made aware in order to have proper public participation in order to preserve such important historic sites. Public participation is an out most important aspect for the conservation of any site.

Absence of legal Plan: -There is an absence of a visionary master Plan available specifically for the heritage sites in Kampur. Such important sites require a separate space in the administrative framework of the authorities in the legal document which has been prepared after consulting proper stakeholders and experts.

Documentation of Heritage structure: The heritage structures of Kampur Region are not documented till date. There is a need of proper listing and documentation of heritage sites in Nagaon. Such sites are to be properly listed under various grades of their importance and documented specifically so that a proper conservation approach can be implemented for such important sites.

7.7 PROPOSED STRATEGIES:

7.7.1 Heritage Management and organizational structure:

There is a need to setup a Heritage Committee for Kampur Planning Area. The concerned Development authorities/municipalities as well as local stakeholders, NGOs have significant role to play in successful implementation of strategies proposed for Kampur Areas. Formulations of special regulations to control or mediate development within the available heritage areas are a prerequisite for effective implementation of the proposed recommendations. Special regulations for all development within heritage areas, including new construction, demolition or modification to existing buildings around historic structures or within historic precincts must be formulated by the concerned authority with the advice of Heritage Committee. Detailed plans must be prepared by respective Municipalities. It is necessary to prepare an inventory of build, cultural and natural heritage resources of the special areas. The inventory must include both protected and unprotected resources.

The cost for most of the new developments in special heritage areas is already covered in budget allocation for “Tourism, Recreation and Culture” and hence not included in this table. Estimates for projects those are specific for preservation of heritage resources are only included. River Front Development is treated as a separate item of budgetary allocation.

The relevant policy guidelines and management of culture and natural heritage can rejuvenate and revitalize the Kamrup region and support the existing cultural identity. It can also promote tourism, boost local economy and contribute a great sense of pride among the residents and become a touchstone for future development.

7.7.2 Strategies for Development of Recreational Areas:

Recreation is any physical or psychological revitalization through the voluntary pursuit of leisure time. It is an activity which is relaxing to people and provides diversions from their normal routine. Generally, there are four types of Recreational activities:

Revitalization: Restoration and enhancement of mental and physical health.

Play: -relaxation and exercise

Adventure: - Excitement and challenge

Education: organized and incidental

Indoor Facilities consist of library, clubs, cinema hall, auditorium, multiplex, art and craft centre, shopping mall, food courts, cyber, gymnasium etc.

Outdoor recreation facilities consist of gardens, parks, playground, golf courses, zoo, and botanical garden, race course, stadium, exhibition ground, water sports complex, green ways etc.

Proposal for augmentation and development of Recreational Facilities:

Development of green belts, plantation, parks, ghats, plazas, along the Kopili riverfront abreast the urban set up and invite nature harsh environment through myriad ways. Amusement parks to be developed along with horticulture, pisciculture, herbal arks, etc. Development of eco-tourism with provision of water theme parks, lagoon resorts, weekend resorts, clubs, etc at planning area level

7.8 PROPOSED STRATEGIES TO BOOST TOURISM:

As a service industry, tourism has numerous tangible and intangible elements. Major tangible elements include transportation, accommodation, and other components of a hospitality industry. Most intangible elements relate to the purpose or motivation for becoming a tourist, such as rest, relaxation, the opportunity to meet new people and experience other cultures, or simply to do something different or have an adventure.

Tourism is vital for every place, due to the income generated by the consumption of goods and services by tourist, the taxes levied on business in the tourism industry, and the opportunity for employment and economic advancement by working in the industry. For these reasons government and private agencies sometimes promote a specific region as tourist destination, and support the development of advancement by working in the industry. For these reasons government and some private agencies sometimes promote a specific region as tourist destination, and support the development of a tourism industry in that area. The contemporary phenomenon of mass tourism may result in overdevelopment; however alternative forms of tourism such as ecotourism seek to avoid such outcomes by pursuing tourism in a sustainable way.

Kampur Region offer substantial potential for tourism development. According to the existing scenario analysis, it has been observed that the following categories of tourism have immense potential for this region.

1. Religious Tourism with historically important structures such as Than, Namghar, temples etc. and other outdoor worshipping areas in the vicinity. Ratnawali Than which is major pilgrimage site is located with a distance of 6 km from the Kampur Town within the planning area. Another important centre for pilgrimage is Madhav Dev Namghar which is at a distance 14 Km from the Kampur town. There are also several old Namghar, Than in the vicinity. These Namghars and Thans should be developed in infrastructure and services facilities for tourist attraction.
2. Nature based outdoor recreation and eco-tourism for forest, riverfront, hills, River Banks, picnic spots, sightseeing etc. Presence of all these tourism products call for the growth of Adventure Tourism. Tengapani Picnic spot (12 Km), Hihila picnic spot (20 Km) and other local picnic spots on the Ghats of Kopili and Nisari can be developed for the attraction of tourist.
3. Surrounding wetland near Darangial, Mazgaon, Mohgaraati, should be converted into eco-tourism for sightseeing which can attract tourism.

7.9 City Beautification Plan/Proposals:

7.9.1 Roadside plantation:

Roadside plantation acts as a buffer between the people and government- owned forests, and it will help to reduce the extensive indiscriminate destruction of forests. Roadside tree planting can make significant improvements to the quality of roads and the environment and can protect key natural resources, especially in ASAL regions where vegetation is essential in binding the soil with organic matter that aids in enhanced infiltration and water retention in the soil.

Planting trees along the road sides, highways and pathway is known as avenue plantation. Avenue plantation is generally practiced for the aesthetic value, Beautification, shade purpose, control of soil erosion and for its economic use of timber, flowers & fruits. Best trees for roadside plantation are Neem, Krishna Chura, Radha Chura, Sonaru. etc. Trees also give us fresh air as they produce oxygen. Trees are planted along the roadside as they provide shade to the travellers during summers.

Table 44: Below table shows the Proposal of Roadside tree Plantation alongside the major Road of Kampur Town Area.

SL. No	Name of the Road	Length
1	Kampur Kathiatoli Road	6 Km (Both side)
2	Kampur Borkola Road	5 Km (Both side)
3	Kampur Baithalangshu Road	2 Km (Both side)
4	Kampur Roha Road	2 Km (Both side)
5	Ghilani Ratnawali Road	3 Km (Both side)
6	Ghilani Changchaki Road	2 Km (Both side)

Requirements and strategies:

Source-Kampur M. B.

- One Kind of Flowering Trees on Both Sides
- Two Kinds of Flowering Trees Blooming at one Time on both Sides of Road
- Two Kinds of Flowering Trees Blooming at Different Time on both Sides of the Roads
- Shady Trees Only on both Sides of Roads.
- The trees should be planted at least 12 m apart from the centre of the carriageway.
- If the road is constructed on the embankment, the trees should be planted as possible as high on the sides of the embankment.

7.10 URBAN AGRICULTURE AND URBAN FORESTRY:

Urban agriculture, urban farming, or urban gardening is the practice of cultivating, processing, and distributing food in or around urban areas. Urban agriculture is also the term used for animal husbandry, aquaculture, urban beekeeping, and horticulture. These activities occur in peri-urban areas as well. Peri-urban agriculture may have different characteristics.

Urban agriculture can reflect varying levels of economic and social development. It may be a social movement for sustainable communities, where organic growers, "foodies", and "locavores" form social networks founded on a shared ethos of nature and community holism. These networks can evolve when receiving formal institutional support, becoming integrated into

local town planning as a "transition town" movement for sustainable urban development. For others, food security, nutrition, and income generation are key motivations for the practice.

In both scenarios, more direct access to fresh vegetables, fruits, and meat products through urban agriculture can improve food security and food safety.

7.10.1 Types of Urban Farming:

Backyard Gardens: This is the growing of food on home property:

- (a) Tactical Gardens. This involves using the limited space available to practice agriculture without having to incur hefty expenses.
- (b) Street landscaping.
- (c) Forest gardening.
- (d) Greenhouses.
- (e) Rooftop gardens.
- (f) Green walls
- (g) Vertical farms.

Strategies:

- (a) Allotment gardens: An allotment garden is a plot or parcel of urban or suburban land made available for individual, non-commercial gardening or food growing and recreation.
- (b) Community gardens: Community gardens are an emerging form of urban farming.
- (c) Inventory of your town land (and rooftops)
- (d) Partnerships and Cultivate market access

Urban forestry is the care and management of single tree and tree population in urban settings for the purpose of improving the urban environment. Urban forestry involves both planning and management, including the programming of care and maintenance operations of the urban forest. Urban forestry advocates the role of trees as a critical part of the urban infrastructure. Urban foresters plant and maintain trees, support appropriate tree and forest preservation, conduct research and promote the many benefits trees provide. Urban forestry is practiced by municipal and commercial arborists, municipal and utility foresters, environmental policymakers, city planners, consultants, educators, researchers and community activists. The urban forestry comprises all green elements under urban influence such as, Street trees and road plantations, Public green areas, such as parks, gardens, cemeteries, Semi-private space, such as green space in residential areas and in industrial or specially designated parks.

Strategies

- (a) Increase tree planting in neighbour hoods with low urban forest cover.
- (b) Increase Street and park tree diversity.
- (c) Plant trees to support green infrastructure and reduce climate change
- (d) Enhance biodiversity through tree planting.
- (e) Update inventory and data management for public trees.
- (f) Manage public trees for public safety and support tree health.
- (g) Work together with local people and the urban NGO related to forestry.
- (h) Raise awareness of the importance of the urban forest.
- (i) Support volunteers, NGOs, schools, and neighbourhood groups in urban forest stewardship.

7.11 PUBLIC RAIN WATER HARVESTING SCHEME:

Rainwater harvesting (RWH) is the collection and storage of rain, rather than allowing it to run off. Rainwater is collected from a roof-like surface and redirected to a tank, cistern, deep pit (well, shaft, or borehole), aquifer, or a reservoir with percolation, so that it seeps down and restores the ground water.

Harvesting rainwater allows the collection of large amounts of water and mitigates the effects of drought. Most rooftops provide the necessary platform for collecting water. Rainwater is mostly free from harmful chemicals, which makes it suitable for irrigation purposes. There are two ways of harvesting rainwater, namely; surface runoff harvesting and rooftop rainwater harvesting.

There are two major techniques of rainwater harvesting.

1. **Surface runoff harvesting:** In this method, rainwater flows away as surface runoff and can be stored for future use. Surface water can be stored by diverting the flow of small creeks and streams into reservoirs on the surface or underground. It can provide water for farming, for cattle and also for general domestic use. Surface runoff harvesting is most suitable in urban areas.

Rooftop rainwater/storm runoff can be harvested in urban areas through:

- Recharge Pit
- Recharge Trench
- Tube well
- Recharge Well

2. Groundwater recharge: Groundwater recharge is a hydrologic process where water moves downward from surface water to groundwater. Recharge is the primary method through which water enters an aquifer. The aquifer also serves as a distribution system. The surplus rainwater can then be used to recharge groundwater aquifer through artificial recharge techniques.

Rainwater in rural areas can be harvested through:

- Gully Plug
- Contour Bund
- Dugwell Recharge
- Percolation Tank
- Check Dam/Cement Plug/Nala Bund
- Recharge Shaft

Although rainwater harvesting measure is deemed to be a desirable concept since the last few years, it is rarely being implemented in rural India. Different regions of the country practiced a variety of rainwater harvesting and artificial recharge methods. Some ancient rainwater harvesting methods which includes Madakas, Ahar Pynes, Surangas, Taankas, etc.

7.12 WATER HARVESTING SCHEMES IN INDIA:

Steps taken by the Central Government to control water depletion and promote rain water harvesting / conservation areas under:

1. Government of India launched Jal Shakti Abhiyan (JSA) in 2019, a time bound campaign with a mission mode approach intended to improve water availability including ground water conditions in the water stressed blocks in India. Ministry of Jal Shakti visited water stressed districts and to work in close collaboration with district level officials to undertake suitable interventions. In addition, 'Jal Shakti Abhiyan – Catch the Rain' campaign has been launched by Hon'ble Prime Minister of India on 22 March 2021.

2. National Water Policy (2012) has been formulated by Department of Water Resources, RD & GR, inter-alia advocates rainwater harvesting and conservation of water and highlights the need for augmenting the availability of water through direct use of rainfall. It also inter-alia, advocates conservation of river, river bodies and infrastructure should be undertaken in a scientifically planned manner through community participation. Further, encroachment and diversion of water bodies and drainage channels must not be allowed and wherever, it has taken place, it should be restored to the extent feasible and maintained properly.

3. In compliance to the decision taken by the Committee of Secretaries, an 'Inter Ministerial Committee' under the Chairmanship of Secretary (WR, RD & GR) has been constituted to take forward the subject of 'Push on Water Conservation Related Activities for Optimum Utilization of Monsoon Rainfall'.
4. Ministry has circulated a Model Bill to all the States/UTs to enable them to enact suitable ground water legislation for regulation of its development, which also includes provision of rain water harvesting.
5. Master Plan for Artificial Recharge to Groundwater- 2020 has been prepared by CGWB in consultation with States/UTs which is a macro level plan indicating various structures for the different terrain conditions of the country including estimated cost. The Master Plan envisages construction of about 1.42 crore Rain water harvesting and artificial recharge structures in the Country to harness 185 billion Cubic Meter (BCM) of monsoon rainfall.
6. CGWB has taken up Aquifer Mapping and Management Programme during XII Plan, under the scheme of Ground Water Management and Regulation. The Aquifer Mapping is aimed to delineate aquifer disposition and their characterization for preparation of aquifer/ area specific ground water management plans with community participation. The management plans are shared with the respective State governments for taking appropriate measures / implementation.
7. Best practices of water conservation by various entities including private persons, NGOs, PSUs etc have been compiled and put on the web site of the Ministry for the benefit of general public. An interactive link on best practices has also been created for receiving inputs from public, which, after necessary evaluation/validation are put on the website for the benefit of the public.
8. Department of Water Resources, RD& GR has instituted National Water awards to incentivize good practices in water conservation and ground water recharge.
9. Mass awareness programmes (Trainings, Seminars, Workshops, Exhibitions, Trade Fares and Painting Competitions etc.) are conducted from time to time each year under the information, Education & Communication (IEC) Scheme of DoWR, RD & GR in various parts of the Country to promote rain water harvesting and artificial recharge to ground water.
10. The Ministry of Rural Development in consultation and agreement with the Department of Water Resources, RD & GR and the Ministry of Agriculture & Farmers' Welfare has developed an actionable framework for Natural Resources Management (NRM), titled 'Mission Water Conservation' to ensure gainful utilization of funds. The Framework strives to ensure synergies in Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), erstwhile integrated Watershed Management Programme

(IWMP) now PMKSY Watershed Development Component and Command Area Development & Water Management (CADWM), given their common objectives. Types of common works undertaken under these programmes/ schemes are water conservation and management, water harvesting, soil and moisture conservation, groundwater recharge, flood protection, land development, Command Area Development & Watershed Management.

11. Central Government supports construction of water harvesting and conservation works primarily through Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and Pradhan Mantri Krishi Sinchayee Yojana – Watershed Development Component (PMKSY-WDC).

12. Atal Bhujal Yojana (ABHY), a Rs.6000 crore scheme with World Bank funding, for sustainable management of ground water with community participation is being taken up in the identified over-exploited and water stressed areas fall in the States of Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh. This scheme is expected to contribute significantly towards water and food security of the participating states.

Strategies at Local Level:

At local level, Urban Local Body/Municipal Board in compliance with Rain water Harvesting should strictly follow the Government Guidelines, Circulars, Manual, model circulated time to time. In different Structural construction, Planning, Drawing, there should be the provision of Rain water harvesting system. In this regard, authority related to the permission of construction of Houses, Building, Structure should follow the rules, Byelaws of Building rules. Regarding rain water harvesting in the Kampur Planning Area, Kampur Municipal Board should strictly follow the Building Rules-2014 Govt. of Assam in issuing Building construction permission and also to create public awareness among people of the locality in rain water harvesting techniques.

7.13 DEVELOPMENT OF PARKS AND RECREATIONAL SPACES WITH IDENTIFICATION AND DEMARCATION OF OPEN SPACE FOR SPORTS, CULTURAL FUNCTION, FAIRS ETC IN KAMPUR PLANNING AREA:

Due to rapid growth of population, the present recreational facilities are not sufficient to fulfil the needs of the people of the Kampur Town. In Kampur Town there is no any organized Parks for the Children and Playground as well as Stadium available of the people.

Table 45: Proposal for Construction of Playground Infrastructure and Parks & other recreational Facilities in Kampur Planning Area:

SL. No.	Name of the Open space	Proposal
1	Tarun Play Ground	Development of Playground infrastructure with Spectators Gallery, Pavilion, Indoor Stadium, Gymnasium
2.	Ghilani Play Ground	Development of mini stadium with spectator's galleries and modern facilities
3	Saraj Bhawan	Construction of Public Auditorium with all modern facilities
4	Raas Field	Construction of Open theatre with all modern facilities
5	Suitable Plot of land	Proposal of construction of 4 Nos. of Modern Marks within the Kampur Municipal Board.
6.	Suitable Plot of land within each Revenue Village.	Proposal for construction of 1 Children Parks and 1 Community centre at each Revenue village of the Kampur Planning Area.

Source-Kampur M.B

The sports and youth welfare activities are one of the major sectors of Human Resource Development Programme. In Kampur Planning area there are 9 (nine) nos. of Play grounds. The Tarun Field is the main playground of Kampur Town which is controlled by Kampur Sports Association. The other playgrounds are also should be upgraded providing with all modern facilities. Besides, there should be Modern Parks, Community centre in each Revenue Village of the Kampur Master Plan Area. Considering the growth of population in Kampur town and the planning area new parks and play grounds like Cricket stadium, Gymnasium Hall, Hockey field are to be created in future.

CHAPTER 8:

LAND USE PLAN

8.1 EXISTING LAND USE OF KAPUR MASTER PLAN AREA -2021:

The study of land use holds a very significant place where a particular settlement can be recognized as a town depends on its functional structure. The functional activity can be regarded as the main regions for the growth of urban centre. The main purpose of land use study is to provide framework for the development of a particular area. It gives us an idea about the proportion of various types of land.

Land use gives an accurate picture of an urban area which is having great significance for future planning. The main purpose of land use classification is to provide framework for the development of a particular area. The need for studying the land use aspect is elaborated as follows: To know the arrangement of various parts of town put to different uses such as residential, commercial, industrial etc.

The Existing Land Use pattern of Kampur Master Plan Area was updated based on ground reality on the scientific base map prepared with the help of Satellite Image and Revenue records like village level cadastral sheets, Field Measurement Book sheets and Town Survey Sheets. The Kampur Planning Area is administratively divided into two entities, Urban and Rural. Urban area comprises of Kampur Municipal Board area of 6.10 Sq.Km and Rural area of 37.62 Sq. Km including 12 Villages. This chapter presents the existing land use analysis, 2021 for the planning area.

As a part of the preparation of GIS Based Master Plan- 2045, the study of the existing Land use pattern of Kampur Master Plan area was carried out by a survey conducted by T&CP, District Office, Nagaon in order to formulate future policies so that a balanced approach can be made in allocating the future land uses. The existing land-use in Kampur Master Plan area has been grouped into the following 8 (Eight categories) categories.

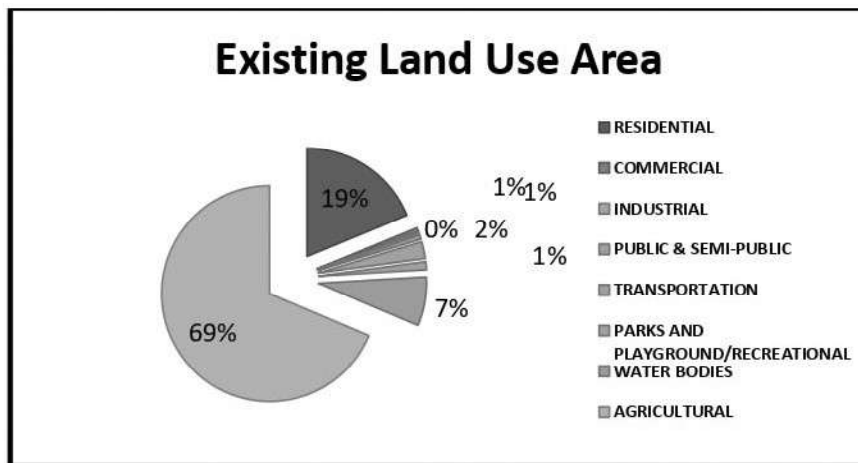
Table 46: Existing Land Use Categories of Kampur Master Plan Area

SL. NO.	LAND-USE CATEGORY	AREA (IN SQ. KM.)	% OF DEVELOPED AREA	% OF TOTAL PLANNING AREA
1	Residential	7.07	78.12	18.79
2	Commercial	0.22	2.43	0.58
3	Industrial	0.12	1.33	0.32
4	Public & semi-public	0.24	2.65	0.64
5	Transportation	0.95	10.50	2.53
6	Parks and playground/ recreational	0.45	4.97	1.20
	Total developed area	9.05	100.00	24.06
7	Water bodies	2.75		7.31
8	Agricultural	25.82		68.63
	Total master plan area	37.62		100.00

Source-Consultancy

The detailed land use analysis of the Kampur Master Plan Area-2021, gives the picture of the shape of the Urban and Rural land for various activities. From the above table it is seen that out of the total land, Agriculture land use being the predominant land use which occupies 25.82 Sq. Km.(68.63 %) of the total planning area, residential land use is spread over 7.07 Sq. Km.(18.79 %).

Out of the undeveloped land area about 2.75 Sq. Km. (7.31 %) occupies by water bodies covered by Kapili River, Hariya River, some ponds and wetlands like Dighali Beels etc... It is also observed that about 0.95 Sq. Km (2.53%) area occupies by transport and communication and 0.24 % occupies by public and semi-public use which includes various Physical and social infrastructure like educational institutes, Government Offices, Hospitals, District and Special jails, Circuit House, Govt. Residential Buildings etc. about 0.22 Sq Km. (0.58%) occupies by commercial.



It is also seen that about 0.12 Sq. Km (1.32 %) of land occupies by industrial use. Water Bodies occupies a large portion land which is about 2.75 Sq. Km (7.31 %).

From the existing Land use table, it is seen that there is huge scope of future development of the planning area. The rural area has concentration of good amount of Agricultural land, open space and water bodies and urban area also has large amount of vacant land and open spaces.

Thus, the Planning area has a good scope of development of existing residential buildings and construction of new residential buildings or redevelopment in conformity with the heritage importance and special regulations for the Planning Period up to 2045.

CHAPTER 9:

PROPOSED LAND USE PLANE

On the basis of planning policies, techniques, principles and projections, various recommendations and proposals for the future growth of Kampur Master Plan Area have been formulated. As such recommendation and proposals have been translated into land use plan to give them spatial dimension. The land use shown in the map indicates the functional relationship between various urban activities visualized up to 2045 and aims at to provide the most economics use of urban land.

The land requirement for various urban activities have also been proposed on the basis of projected population of 68,172 by 2045. The distribution of land into various broad categories of land use have been made keeping in view the minimum desirable standards of development and functional linkages between them. The following table shows the land proposed for various major uses.

9.1 PROPOSED LAND USE IN KAMPUR MASTER PLAN AREA:

The Proposed Land use in Kampur Master Plan Area for 2045, considering all the above analysis can be summarized as below:

Table 47: Proposed Land Use classifications for different uses of Kampur Master Plan, 2045

Sl. No.	Land use Category	Area (in Sq. Km.)	% of Developed Area	% of Total Planning Area
1	Residential	9.44	58.13	25.09
2	Commercial	0.62	3.82	1.65
3	Industrial	1.17	7.20	3.11
4	Public & Semi-Public	0.92	5.67	2.45
5	Transportation	1.65	10.16	4.39
6	Parks And Playground/ Recreational	1.97	12.13	5.24
7	Composite Use	0.47	2.89	1.25
	Total developed area	16.24	100.00	43.17
8	Agricultural	17.90		47.58
9	Water Bodies	2.74		7.28
10	Green belt Proposed	0.58		1.54
11	Eco-Zone Proposed	0.16		0.43
	Total area	37.62		100.00

Source-Consultancy

9.2 PROPOSED RESIDENTIAL USE:

To accommodate the projected population of **68, 172**, an area of about **9.44 Sq. Km.** is proposed for residential use in Kampur Master Plan Area. The plan provides the following pattern of residential density.

9.3 PROPOSED COMMERCIAL LAND USE:

With the rapid population growth in Kampur the existing commercial area concentrated along the SH-17 and SH-18 and surrounding the town area will not be sufficient to meet the need of future projected population.

Therefore, an additional area of about **0.62 Sq. Km.** is proposed for commercial purposes in the Kampur Master Plan area.

9.4 PROPOSED INDUSTRIAL LAND USES:

There are good prospects for setting up of forest and agricultural-based small and medium industries in Kampur Master Plan area. There are also good scopes for setting up of service and light consumer goods producing industries like agriculture implements, readymade garments, soap making, brick making, bakery, plastic goods, power loom etc. In addition to the existing industrial area, an area of about **1.17 Sq. Km.** of land has been earmarked for setting up of medium and light industries in the Kampur Master Plan Area.

9.5 PROPOSED PUBLIC AND SEMI-PUBLIC USE:

In the Kampur Master Plan area land proposed for public and semi-public use is **0.92 Sq. km.** which is required for proposed as public and semi-public use. The public and semi-public uses have been proposed on Govt. land of Kampur Master Plan Area.

9.6 PROPOSED CIRCULATION PLAN:

The land is proposed under Road & Transportation will be **1.65 Sq. Km.** of Kampur Master Plan -2045. The proposals for improvement and widening of roads within Kampur Master Plan Area.

All the major junction points should be developed in a planned manner. Modern traffic signalling system is to be proposed within the Kampur Master Plan Area.

Hierarchy of Road proposed with width:

- 1) Arterial Road = 50-80 m width
- 2) Sub Arterial Road = 30-50 m width
- 3) Collector /Distributor Road =12 -30 m width
- 4) Local Road = 6.6 to 15 metre width

9.6.1 FIXATION OF ROAD LEVEL OF KAMPUR MASTER PLAN AREA

In order to maintain uniformity Road levels to be defined at the Local Area Plan level to ensure integrated road levels with drainage system and slope. No roads to have two different road levels without a proper median or a separator. Repeated excavation of roads damaging the underground utilities and disturbed road levels.

While planning, planners face the problems associated with road levels, lying of new pipelines, parking in residential areas, decongestion, fire safety issues, requirement of road widening and lose of heritage façade, provision of land for social infrastructure and sometimes re-planning underground infrastructure.

Table 48: - Proposed Road Level (RL) of the major Roads of the Kampur Master Plan Area

SL. No.	Name of the Road	Road Level at Different points (in metre)	Remarks
1	State Highway-17 (Kathiatoli to Kampur)	58.58, 69.19, 70.10	Shown in the Circulation Map
2	Brindaban Nagar-Ahom Gaon Road	70.71, 64.00	-do-
3	Kampur Post Office Road	68.88	-do-
4	Kampur Thana Road	67.97	-do-
5	Nagaon-Borkola-Kampur Road	70, 71	

Source-Census of India

9.6. 2 LANDUSE FOR COMPOSITE USE

Within Hojai Master Plan area land proposed for Composite use is **0.47 Sq. Km.** This category of Land use is introduced as per Town & Country Planning Act, 2022 under which mixed use of commercial, Residential, Public & Semi-Public, existing industrial may be include.

9.7 ZERO POINT OF KAMPUR MASTER PLAN AREA

Free Stationing is a method of determining a location of one unknown point in Relation to known point. There is a zero point of reference called a total station. Zero point is the first starting point from where we can measure distance from one point to another unknown point.

In case of preparing Contour Map of Kampur Master Plan area, the zero point or the starting point has been selected as the “Kampur Circle Office” and the co-ordinate of the Zero Point is 26° 09' 28.62" N and 92° 39' 38.19" E.

9.8 LAND PROPOSED FOR ECO- ZONE:

The land is proposed for Eco- Zone is **0.16 Sq. Km.** of the total Area of Kampur Master Plan.

9.9 PROPOSED NO CONSTRUCTION ZONE AND NO DEVELOPMENT ZONE

To regulate the construction near water bodies and to conserve rivers and canals, buffer zones around them have been proposed in the Kampur Master Plan Area, and the same has been denoted in the proposed Nature Conservation Map. It indicates the buffer areas prescribed for the conservation of water bodies in the town. This area proposal is made based on the buffer distance fixed for each water body. As the primary objective for the zone is conservation, planned green space development can also be attained in this area. Buffer areas have been proposed along the Digholi Beel, Ahom gaon pitani, Kathar Dolong beel, Bamun Dolong Beel, Saru Buklong, Bor Kasupit, Saru Kasupit etc. and water bodies mainly wetland area, ponds, etc. of the Kampur Master Plan Area.

Buffer width of 15 metres has been proposed along the water bodies inside Municipal Area and 50 metres along the water bodies outside the Municipal Area. A Nature Conservation map has been prepared showing no construction zone and no development Zone of Kampur Master Plan Area.

9.10 INFRASTRUCTURE PROPOSALS:

The availability of existing social / physical facilities and their services of Kampur Master Plan area have been studied. The existing deficits and future requirements are calculated as below:

9.10.1 Education:

To accomplish the social and economic up-liftmen of the society is not possible without the modern and up to date educational system capable of eradicating illiteracy and ignorance and providing skilled and trained up man power required by changing economic condition. The educational requirement for Kampur.

Table: 49 Estimated Requirement of Educational Institutios in Kampur Master Plan area up to the year 2045

Sl. No	Type of Educational Institute	Norms	Existing Numbers	Deficit	Total area required (in hectare)
1	Primary school	1 in 2500 population	30	--	--
2	Middle school	1 in 5000 population	11	2	2
3	High school	1 in 7500 population	7	2	2
4	Higher Secondary school	1 in 90,000 population	3	--	--
5	General college	1 in 1,25,000 population	1	--	--
Health					
6	Intermediate Hospital	1 in 1,00,000 population	1 Nos.	--	--
7	Nursing Home , Maternity home	1 in 45,000 population	Nil	2	2
8	Dispensary	1 in 15,000 population	1	3	3
Socio-Cultural Facilities:					
9	Community Room	1 in 5000 population	1	12	12
10	Community Hall/ Library	1 in 15,000 population	1	3	3
11	Music Dance & Drama etc.	1 in 1,00,000 population	Nil	1	1
12	Religious	1 in 5000 population	4	9	9
Communication					
13	Post Office	1 for 15,000 population	2	2	2
14	Police Station	1 for 90,000 population	1	-	--
15	Fire Station	1 for 2,00,000 population	1	--	--

Source-T&CP, Nagaon compilation

9.10.2 ROAD PROPOSALS:

Within Kampur Master Plan Area total 22 Nos. of roads are proposed for future improvement and widening which are shown in the table below:

Table 50: Proposals for improvement and widening of roads in Kampur Master Plan Area

Sl. No.	Name of Road	Length (approx)
1	Tetelisara 5 Ali to 3 no. gate	2 Kms
2	Bhalbhalia Gaon Namghar to Petrol Pump(East)	1 Km
3	Nilakantha Resort to Kampur Jamunamukh connecting road	-
4	Higher Secondary Pachanijhar-Kampur Kathiatoli connecting road	1.5 Km
5	Kampur Barkola and Kampur – Kathiatoli connecting road	-
6	Kapili bridge to M.V. School	1 Km
7	Kapili Bridge to Kampur Chaparmukh connecting road	2 kms
8	Pachanijhar to Ahomgaon	1 Km
9	Kampur -Barkola to Ahomgaon	1.5 Kms
10	M.V.School Bhalbhalia gaon to Barghat	2.5 Kms
11	Tetelisora 5 Ali to Kampur Barkola road	5 Kms
12	Tetelisora K.K.road to Palasa	3 Kms
13	Tetelisora gaon road	1 Km
14	Mahani Ati to Tetelisora road	300 m
15	Tetelisora grant road	1.5 Kms
16	Amora Ali	300m
17	Sugar mill to Majorati	1.5 kms
18	Bhakat gaon road	500m
19	Atigaon – Niz Kampur Mohmaria Ali	1.5 Kms
20	Ati Kampur to Darangial gaon	1.5 Kms
21	Kapili Bridge to Changchoki	1 Km
22	Kapili Bridge to Deb Narikali	2 Kms

Source-Kampur Municipal Board

9.10.3 PROPOSALS FOR WATER SUPPLY:

1. Pipe Water Supply Scheme (PWSS) Near Tarun Field
2. PWSS, Near Kopili Bridge
3. PWSS, Mahgariati
4. PWSS, Tetelisara

9.10.4 PROPOSALS FOR DRAINAGE SYSTEM:

1. MV School To Takodubi (1.5 Km) (North Side To The Road)
2. MV School To Kopili Bridge (2km- South And East Part Of The Road)
3. Kopili Bridge To Takoudubi (Via Gurukul Shool)- 1.5 Km
4. Kampur Market To Pachanijhar (2km) East
5. Kampur Market To Pachanijhar (2km) West
6. Kampur Higher Secondary School To Ahom Gaon (1.5km) South
7. Ahom Gaon To Kampur Nagaon Connected Road (1km) North
8. Kampur Borkola Road To Kampur Kathiatoli Road (1.5 Km) North
9. Kampur H.S School To Mahgaria Ati West (2km)
10. Kampur H.S School To Mahgaria Ati East (2km)
11. Kampur Bazzar To Kampur Higher Secondary Road (1km) North
12. Kampur Bazzar To Kampur Higher Secondary Road (1km) South

CHAPTER 10:**DISASTER PLAN**

Disaster is an undesired calamities event that seriously disrupts the functioning of a community or society and causes human, material and economic or environment losses that exceed the community's or society's ability to cope using its own resources. Disasters are usually caused by nature but in some cases, it can be caused by human actions as well. Disaster can be broadly classified into water and climate related geology related and accidental related. Assam has been traditionally vulnerable to natural disasters on account of its unique geo-climatic conditions. Flood, drought, cyclones, earth quakes and landslides have been recurrent phenomena.

At national level, the ministry of Home affairs is the nodal Ministry for all matters concerning disaster management and at state level State Disaster Response force under Ministry of Home, Govt. of Assam is the responsible agency to tackle any disasters within the State.

Kampur in Nagaon district comes under Brahmaputra valley and one of the towns located on the banks of downstream of Kopili River, a south bank tributary of River Brahmaputra. After entering Assam kopili separates the karbi Anglong district from the Dima Hasao Hill District up to Diyung river confluence and enter Nagaon District flows North-Westerly direction. Nagaon district has got very high reserves of Glass sand. Thus, it can be unanimously vouchsafed that the geology of Assam depicts a rich repository of minerals with its diversified geographical structure.

10.1 FLOOD:

As Kampur is located in the downstream of Kopili River and due to the Kopili Hydro Electric Project, dam induced flood is experiences by the people living in the downstream of the river Kopili. The Kopili dam has changed the character of flood in the downstream for the worse. Before the construction of Kopili dam, floods occurred mainly during monsoon season. Increase in water volume due to heavy rains used to be the reason for flood. These were the normal floods which occurred not more than two or three times in a year. But after the construction of the dam, number of artificial floods occurring in a year has gone upto 5-6 times. These floods mainly occurred from the month of August to the first one or two weeks of November.

In the catastrophic flood of 2004, out of the 140 revenue villages of Kampur circle of Nagaon district 132 were affected by floods with an area of 135.12 Sq. Miles. Due to these floods 1, 92,000 people were temporarily displaced. It is confirmed by different sources that main reason for the devastation in these areas of Nagaon and Morigaon districts was the release of the water from the NEEPCO's Kopili project.

Flood release from the dam happened without prior warning and affected the whole Kopili valley. After this flood, it is clear that the construction of Kopili HEP flood ferocity had increase in the downstream.



Kampur Town under artificial flood



Natural Flood by River Kopili at Kampur

10.2 EARTHQUAKE:

The Major consequences of any earthquake are widespread human and material losses, excessive damage to infrastructure and services. According to the geological survey of India, seismic Zoning map of the country, Silchar region lies in zone-V which is said to be the most active seismic zoning Map of the country. Like rest of Assam, the Nagaon district has always been subject to earthquake as it lies in the zone of seismic disturbances. The Great earthquake which occurred on June 12, 1897 had its epicentre in the shilling plateau. It had a magnitude of 8.5 Richter scale and was probably one of the greatest earthquakes ever recorded. The shock was felt over an area of 1,750 km² and destruction of stone buildings was almost universal in an area of 30,000 km² including shilling, Goalpara, Nagaon and Sylhet area of Bangladesh. Land slips and an earth fissure was very abundant over the whole of the epicentral area. In Nagaon, most of the government buildings including the circuit house, Court building and the Deputy Commissioner's Bungalow were rendered unfit for habitation. Part of the District jail wall collapsed. The earthquake of August 15, 1950 had its epicentre at 28.5 E N and 96.7 E L and had a magnitude of 8.6 Richter. The estimated area of North-Eastern Assam over which extensive and heavy damage occurred was 1900 sq. m.

Kopili Fault line: In recent studies done in the river Kopili basin it is found that the Kopili fault extends from western part of Manipur up to the tri-junction of Bhutan, Arunachal Pradesh Assam, covers a distance of about 400 km. During the last 140 years, the Kopili fault has experience 2 earth quakes of magnitudes greater than 7 in R.s and several of magnitude 4.5 to 6 in R.S. The study concludes that the North East region, more specially the Kopili fault area is a geologically unstable region, surrounded by faults and lineaments and seduction zones in the east.

Table 51: Occurrence of Earthquakes in Nagaon District

SL. No.	Disastrous	Year of occurrence	Area Affected	Name of localities
1	Earthquake	1897, 1950	Around 1750 Sq. m. area, Kolong river Altered	All the five circle of District

Sources: -Department of Disaster Management, Nagaon

10.3 DROUGHT:

The Southern part of Nagaon district in central Assam valley and adjoining parts of Karbi-Anglong form a rain Shadow zone where annual rainfall is as low as 800-1200 mm. Water scarcity is a potential constraint for the people living in these areas. Absence of effective irrigation systems or water harvesting practices adds to the Vulnerability of the people. Lunding, Hojai located centrally in this zone shows a decline in rainfall at a rate of 2.15 mm per year. As a result, water crisis might aggravate in this region in the coming years.

Table 52: Occurrence of Droughts in Nagaon District

SL. No.	Disastrous	Year of Occurrence	Area affected	Name of the localities
1.	Drought	2009	Nagaon District	All the circles of District

Sources: -Department of Disaster Management, Nagaon

10.4 RIVER EROSION:

River erosion is a season specific calamity observed in certain period mostly in fixed seasonal interval, in rainy season specifically from the months of April to July. The Brahmaputra has unleashed its destructive force again in Assam. The sudden massive erosion caused by the river along its southern banks in Nagaon district over 800 hectares of land at Hatimura, Baneswar, Baghjan and Kukurakata villages have been severely affected. Even the outer extension of Kaziranga National Park is faced with the treat of erosion.

Bank erosion prone area of the streams and Rivers of Assam are to be converted by different soil conservation measures prone area of the streams and rivers of Assam are to be

covered by different soil conservation measures in order to check the continuous loss of Agricultural land Gully erosion is the main erosion problem, which damages a considerable area of Agricultural land annually. Gullies are the formation in the soil by the surface runoff water initiating sheet, rill and finally the gullies resulting in accountable loss of the top fertile soil. Gully control structure like spillways, check dams etc are constructed to stop further advancement of the gully heads and fingers and to improve the moisture regime in the command areas which results in increase in production from agricultural land.

Acid contamination due to opencast mining in upper course of Kopili River threatens viability of lower downstream places like Kampur town, Kheroni, Raha, etc of bank erosion. It is having been reported at EAI that the acidic mine discharge in the upper reaches of the Kopili catchment is posing serious threats of bank erosion in lower downstream area. Moreover, during the time of monsoon and continuous downpour increase the volume of water in Kopili and Nisari River leads to constant erosion/corrosion on it.

Table 53: Occurrence of River erosion in Nagaon District

Sl. No.	Disastrous Event	Year of Occurrence	Area affected
1	River erosion	Every continuous year	Nagaon district

Source: - Department of Disaster Management, Nagaon

10.5 SEASONAL HAZARD ANALYSIS:

Table 54: Seasonal hazard analysis

Hazards	January	Feb.	March	April	May	June	July	August	Sept	Oct	Nov.	Dec.
Cyclone	X	X	X	X	X	X	X	X	X	X	X	X
Flood					←	←	←	←				
Drought					←	←	←	←				
Earthquake	←	←	←	←	←	←	←	←	←	←	←	←
Fire		←	←									
Lightening				←	←	←	←	←				
Epidemic	←	←	←	←	←	←	←	←	←	←	←	←

Source: - Department of Disaster Management, Nagaon

10.6 DEPARTMENT OF DISASTER MANAGEMENT, NAGAON VULNERABILITY (RISK AND HAZARDS) ANALYSIS:

Table 55: Vulnerability (Risk & Hazards) Analysis

Types of Hazards	Potential	Vulnerability	Vulnerable areas
Cyclone	Nil	-	-
Flood	Loss of crops, Human lives and animals and properties damage	Communication facility, Agriculture & Horticulture, Private infrastructure Houses, Irrigation sources, Electrical installations, Drinking water sources, Educational institution, and livestock	All the Revenue Villages of Kampur Circle
Drought	Drought human life and pets	Loss of Human lives & pets	Entire Kampur circle
Earthquake	Human lives & Structures both public & Pvt.	Loss of Human lives & structures both public & pvt.	Entire Kampur Circle
Fire	Lives and property	Loss of Human lives & structures both public & pvt.	Entire Kampur Circle
Epidemic	Human lives & Pets	Loss of Human lives and pets	Entire kampur Circle
Lightening	Human lives	Loss of Human lives	Entire Kampur Circle

Source: -District Disaster Management Plan, 2020, DDMA, Nagaon

10.7 INFRASTRUCTURE VULNERABILITY AGAINST HAZARDS:

Table 56: Infrastructure Vulnerability against Hazards

Vulnerability	Flood		Accident		Fire	
	Population	Area	Population	Area	Population	Area
Road network	15, 00,000 appx.	Nagaon sadar, Raha, Kampur, Samaguri, Kaliabor Revenue Circle areas 2800 sq k.m	6,25,000 appx	Along NH 36 & 37, SH-17, SH-18 urban area approaching roads.	---	---
Water Supply	15,00,000 appx.	Nagaon sadar, Raha, Kampur, Samaguri, Kaliabor Revenue Circle areas 2800 sq k.m	-----	-----	----	---
Hospital	50,000 appx.	All Development block areas	-----	-----	1500 appx.	Civil Hospital Nagaon
Food stocks & Supplies	15,00,000 appx.	Nagaon sadar, Raha, kampur, Kampur, Rupahi, samaguri, Kaliabor Revenue	-----	-----	15,00,000	Nagaon sadar, Raha, kampur, Kampur, Rupahi, samaguri,

		circle areas 2800 sq. km				Kaliabor Revenue circle areas 2800 sq. km
Communication (system)	15,00,000 appx.	Nagaon sadar, Raha, kampur, Kampur, Rupahi, samaguri, Kaliabor Revenue circle areas 2800 sq. km	----	----	----	----
Embankments	15,00,000 appx	Nagaon sadar, Raha, kampur, Kampur, Rupahi, samaguri, Kaliabor Revenue circle areas 2800 sq. km	----	----	----	----
Bridges	15,00,000 appx	Nagaon sadar, Raha, kampur, Kampur, Rupahi, samaguri, Kaliabor Revenue circle areas 2800 sq. km				

Source: -District Disaster Management Plan, 2020, DDMA, Nagaon

10.8 MITIGATION PLAN:

Any disaster management plan or emergency management plan consists of four phases, namely: Mitigation, Preparedness, Response and Recovery. The Mitigation component in an emergency management plan is aimed at reducing the risk, impact, effects of a disaster. Hence careful planning eliminates the phase is important to reduce or eliminate the long-term risk to human life, property from natural and manmade calamities. It's important to have mitigation plans led by local community, working together to identify, plan for in the event of a disaster and reduce vulnerabilities and promote long term personal and community resilience and sustainability. Mitigation Plans can concentrate on both pre-disaster and post disaster efforts to reduce the impact of the disaster.

Pre-disaster Mitigation should focus on projects and interventions to address natural and man-made disaster to reduce risk to the population and property. This is mainly achieved by strengthening the resilience of National/state infrastructure. Post-disaster Mitigation efforts are primarily designed to reduce future damage in an affected area and decrease the loss of life and property and life due to the incidents following the disaster. The essential steps of hazard mitigation are:

- (1) Hazards identification
- (2) Vulnerability Analysis
- (3) Defining a Hazard Mitigation Strategy.
- (4) Implementation of Hazard Mitigation Activities and projects

Kampur region is more prone to floods than any other natural disasters hence the disaster vulnerable area mitigation plan focuses on flood related eventualities and how can it be mitigated and have better preparedness. It is important to note that disaster management is an integrated task involving various government departments of region and the plan should focus on prevention, preparedness, mitigation, response, and measures.

Table 57: Embankments and venerable reaches of the Nagaon district

Dyke	Area	Length	Benefiting Area
Hatimura	Kaliabor	3.595 Km	1329 H
Brahmaputra Dyke		88.845 Km	48,000 H
Bihdubi		300 mt (dist. from dyke)	2 km
Sullung Borghuli		200 mt. (dist. from dyke)	8 Km
Bogamukh		500 mt (dist. from dyke)	2 Km
Kopili L/B Dyke from charaihagi to Tuklaitup		27.4 Km	--
Kollong dyke R/B from phulaguri to Molankata		8.6 Km	---
Extension along R/B of Kollong from phulaguri to hoiborgaon		16.2 Km	---
Embankment along R/B of Nonoi & haria from Tulsimukh to Hariaghat		9.5 km	---
F/E along L/B of Nonoi from Bamuni to doboka PWD Road		8.5 km	
NTP Dyke on both side bank of kollong River		6.2	

Source: - District Disaster Management Plan, 2020, DDMA, Nagaon

10.9 PREVENTION:

As part of the said natural disasters the following measures can be adopted by concerned govt. departments to avoid and minimize the impacts of natural disasters.

= The public work department should monitor the major water bodies like river, streams lakes for constant flow of water, rising level and identify potential areas along the water bodies which need

additional embankment or revetments, and these works should be implemented on priority before the onset of the season.

= Power and communication should carry out through inspection of power lines, communication lines for defects and rectify them. Trees and branches which may damage power and communication lines should be trimmed or removed.

=Health department should ensure the primary and community health centers are equipped with medicines and medical staff. Preventive vaccines for epidemics should be stocked in adequate quantity. Chlorination of drinking water should be ensured to avoid the outbreak of epidemics in the event of cyclones and floods.

= The department of disaster management is the nodal agency in the Nagaon region and has already handled several flood and cyclone situation in the region. From this experience, it should be able to identify the low lying and vulnerable areas and the population of such places must be warned to be alert and to be ready to safer areas or to the relief camps in case of warning disaster.

= The department of civil supplies & consumer affairs should decide for creation of buffer stock of food grains by making required withdrawal from the food corporation of India. Also, adequate quantities of kerosene and diesel should be procured and made available through the fair price shops.

=Department of Agriculture should take steps to publicize precautionary measures to be taken to save the standing crops in the vulnerable areas. Farmers should be encouraged to have platforms in their fields to stock the crops. De-silting of the public and private irrigation canals should be ensured for quick drainage of paddy fields.

=Fisheries Department shall alert all the people residing on river bank villages and hamlets about the impending natural calamities and advise the fisherman not to venture into sea till normalcy is restored.

=Department of School education shall keep all schools ready for accommodating the evacuees and keep the central kitchens to function around the clock with in charge of the centers. NCC and NSS students shall also be grouped to send them for relief works

=Department of Animal Husbandry should store fodder, cattle feed, and poultry food etc. and also carries out the inoculation of animals against epidemics. The Key village units should harbor stray cattle with shelters.

=Transport Department should keep ready the list of sufficient numbers of earthmoving vehicles, transportation vehicles such as trucks, tractors, tippers, proclams, mini buses etc. Further, all the

listed vehicle allocated in connection with calamity has to be kept in roadworthy condition for using them in emergency.

=Local Urban Bodies/Municipal Board shall make rearrangement for availability of Generators and pump sets at short notice. For areas with water logging and artificial flood local bodies should clear the L & U type drained which normally clog due to plastic materials and silt.

=Police department shall set up a Search & Rescue Team which shall contain at least 20 police personal for each jurisdiction of the superintendent of police.

=Similarly, the fire services department shall set up search & Rescue Team consisting of at least 6 members of each fire station.

10.9.1 Mitigation and Preparedness:

Pre-disaster planning consists of activities such as disaster mitigation and disaster preparedness. Disaster mitigation focuses on the hazard that causes the disaster and tries to eliminate or drastically reduce its effects. The best example of mitigation is the construction of embankments and construction of proper drainage system in flood prone areas to avoid floods. The other example includes retrofitting of weak buildings to make them earthquake resistant. And preparedness focuses on plans to respond to a disaster threat or occurrence. It takes into account estimation of emergency needs and identifies the resources to meet the needs. The first objective of the preparedness is to reduce the disaster impact through appropriate actions and improve the capacity of those who are likely to be improving the capacity of those who are likely to be affected most. The second is to ensure that ongoing development continues to improve the capacities and capabilities of the system to strengthen preparedness efforts at community level. Finally, it guides reconstruction so as to ensure reduction in vulnerability.

The best example of preparedness activities are the development of community awareness and sanitization system through community education and administrative preparedness by way of stockpiling of supplies, developing emergency plans for rescue and relief. For successful mitigation plan it is necessary to identify short- medium-long term mitigation measures risks and damages.

The following steps can be taken to reduce the risk in the unfortunate event of the said natural disasters.

=Restore communication networks

=The task force in association with reach and rescue teams of police and fire should thoroughly search the affected area for survivors and injured.

=In case of heavy flooding and inundation, vehicular access may be restricted and hence suitable rafts/boats should use to rescue and evacuate the people affected by the floods

=Water logging in low lying residential areas should be pumped out and the pump out water could be let out through the nearest natural drain or canal. Also, fire engines can be deployed to pump out water from affected areas during emergencies.

=Any breach in rivers, streams or natural drains should be protected with adequate sand bags or creation of temporary embankments to avoid further damage to property and human life

=In case of heavy storms, power supply to areas which are in the primary path of the storm can be disconnected to avoid hazards due to breakage of power lines. Provisions should be made to provide generations for temporary power supply to storm affected areas.

=Relief camps should be opened in appropriate location where a large number of people are affected.

Table 58: Mitigation and Preparedness

Type of Sector	Sub-sector	Mitigation Measures	Responsible Dept.	Time frame
Infrastructure Development	Road	Repair, Restoration of vulnerable points on roads before onset of monsoon	PWD/DRDA	During Normal time and immediately
	Embankments	Repair of vulnerable points in river/canal embankment during free flood period	Water Resources/Irrigation	During Normal time and immediately
	Bridge	Repair, restoration of vulnerable points on bridge before onset of flood	PWD, NH	During Normal time
	Communication	Ensure maintenance and proper functioning of electronic communication system	BSNL	Round the year
	Drinking water	Replacement of tube well/pipe water	PHE/ Health Deppt.	During Normal time and immediately
	Power	Immediate response for repair of electric line and supply	PWD, ASEB	Round the year
Health	Vaccination	Adequate stock piling of vaccines should be ensured	CMO, DVO, NGO,s	During Normal time and immediately
	Training	Training Programe of common people should be programmed for Health care, sanitation and first aid from village level to district	CMO, DVO, NGO,s	During Normal period
Livelihood	Awareness	Creating awareness among general public during normal time to insured human life	Leading NGO,s	During Normal time

	Agriculture	Alternant cropping pattern/flood resistance crops/crops insurance etc	Dy. Director Agriculture	During normal time and immediately after disaster.
Planning and Response	Relief/Rehabilitation	Regular up-dation of departmental contingency plan, Community awareness and involvement of NGO,s Regular conduct of mock drill	Line Departments	During Normal time

Source: -District Disaster Management Plan, 2020, DDMA, Nagaon

10.9.2 Response Plan:

Response measures are those taken immediately prior to and following disaster impact. It is important to have clear organizational chart structures with established line of authority within the Government mechanism to handle the response plan in case of natural calamities. Response plans include formation of functional teams and providing plans for the transportation, evacuation, search and rescue and rehabilitation. Survey and assessment part should be the part of response activity.

Coordinated IEC activities should be initiated well in advance

=Mock Drill should carry out twice a year.

=Make separate plan of operation and list of required materials, tools, machineries for each kind of disaster.

=Train the rescue team with equipment

=Train the panchayat leaders, Municipal leaders, Volunteers etc.

=Approach to NDMA and SDMA for any kind of assistance.

=Incident Command Officer shall organize regular coordination meeting with all DM committee members, Head of Offices, Public leaders, NGO,s and Senior citizen in consultation with the chairman

=The RRTs (Medical & Police) will be alerted by the incident Command Officer.

10.9.3 Aim of Disaster Response:

= To ensure the survival of the maximum possible number of victims, keeping them in the best possible Health in the circumstances.

= To re-established self-sufficiency and essential services as quickly as possible for all population group.

=To repair or replace damaged infrastructure and regenerate viable economic activities.

=In situation of civil conflict, the aim is to protect and assist the civilian population.

=In case involving population displacement the aim is to find durable solutions as quickly as possible.

10.10 DURING THE DISASTER

=Disseminate the warning of disaster from DDR & IC to all concerned destination in single attempt by using mass sms, announcement through radio, social media, print media and ask the people who are likely to be affected, to take shelter in safer places.

=Immediate deploy the forces to clear the route of search & rescue and also to clear the traffic from the route of rescue

=Command to the forces, NGOs, SHGs & volunteers to rush immediately to the affected area for search and rescue with all pre listed tools, equipment for disaster.

10.10.1 City Disaster Management Plan:

The points mentioned above should be part of a city or region level disaster management Plan. The Disaster Management Act, 2005 has brought a change from response & relief-oriented approach. This has encouraged many cities to formulate a city disaster management plan, the same should be worked for kampur MPA as well to enable it to be better prepared in case of natural disasters in the future. As part of Master Plan 2045 the authority feels there is a need for a

CDMP for the Planning area covering the following general principles-

=Risk & Hazard Assessment

=Planning

=Organization

=Resource Utilization

=Need for Specialist

=Training

Generally, the CDMP prepared for the planning area should include sectoral plans covering the following aspects of disaster & emergency management: -

=Overall Preparedness

=Emergency Response

=Prevention

=Mitigation

=Recovery

=Reconstruction

=Capacity Building Plans

10.11 SECTOR -WISE INVESTMENT PROPOSAL:

Table 59: The sector wise requirement of implementation of various projects of Kampur Master Plan Area is detailed as table below:

SL. NO.	Location		Project Name
Proposals for Parks and Playground			
1.	Kampur Revenue Town	Dag No.258	Construction of Parks and Playground
2.	Barpatia	Dag No.535	Construction of Parks and Playground
3.	Niz- Kampur	Dag No.974	Construction of Parks and Playground
4.	Tetelisara Grant	Dag No.667	Construction of Parks and Playground
5.	Tetelisara Gaon	Dag No.600	Construction of Parks and Playground
6.	Bhabhalia	Dag No.901	Construction of Parks and Playground
Proposals for Solid Waste management			
7.	Kampur Planning Area		Improvement and Modernization of Solid Waste Collection, Transportation and Disposal System of Kampur
8.	Kekuribari (Kalaikhowa) , Dag No.73		Development of Solid Waste Engineering Landfill Site on 20 Bigha of Land
Proposals for Drainage System			
9.	Kampur Planning Area		Preparation of DPR for Drainage System for Kampur Area
10.	Kampur Town		Construction and Improvement of Existing Storm Water Drains
11.	Kampur Town		Cleaning and Maintenance of existing Drains
Proposals for Development of Water Bodies			
12.	Kampur Planning Area		Conservation and Proper Management of Water Bodies in Planning Area like Dighali Beel
13.	Kampur Planning Area		Beatification and Management of Dighali Beel, Ahomgaon Pitani, Kathar Dolong Beel, Bamun Dolong beel and other Water Bodies with joggers track as recreational zone
14.	Kampur Planning Area		Development of Green Belt around all water Bodies
15.	Kampur Planning Area		River Front Development Project on the suitable location on the Bank of River Kopili
Proposals for Traffic and Transportation			
16.	Major ati, Dag No. 298 to 304		Construction of Bus Terminus
17.	Bhalbhalia, Dag No. 469		Construction of Truck Terminus
18.	Niz- Narikali and Charaihagi		Construction of Bus and Truck Bays
19.	Kampur Town Area		Construction of Cycle Parking
20.	Kampur Town Area		Construction of street Parking
21.	Kampur Town Area		Construction of Traffic Signals Point

Proposals for Town Planning Scheme (TPS)		
21	Major ati, Tetelisara Grant, Charaihagi and Niz-Kampur	Implementation of Town Planning Schemes
Proposals for Local Area Planning Projects (LAPP)		
22	Within Kampur M.B. Area at Ward No.9	Implementation of Local Area Planning Projects
Proposals for Neighbourhood Centres		
23.	Niz-Narikali, Dag No. 192	Construction of Neighbourhood Centre
24	Charaihagi, Dag No. 58	Construction of Neighbourhood Centre
25	Tetelisara Grant, Dag No. 667	Construction of Neighbourhood Centre
26	Barpatia, Dag No. 535	Construction of Neighbourhood Centre
27	Tetelisara Gaon, Dag No. 600	Construction of Neighbourhood Centre
Proposals for Industrial Area		
28	Bhalbhalia Area	Development of existing Sugar Mill Area as a industrial estate
29	Bhalbhalia Area	Development of Industrial estate
30	Kekuribari Area	Proposed as Industrial Area
31	Niz- Narikali	Proposed as Industrial Area
32	Charaihagi	Proposed as Industrial Area
Proposals for Bridge		
33	Patiapam/ Bhakat gaon	Construction of Bridge over Kapili River
34	Kampur- Kathiatoli road at Tetelisara Market Chariali	Construction of Bridge over Hariya River beside the existing bridge
35	Deka gaon connecting with Charaihagi	Construction of Bridge over Kapili River at Deka gaon connecting with Charaihagi beside the existing bridge
Proposals for Road Cum Embankment		
36	Bhakat gaon via Tetelisara market chariali to Kekuribari	Construction of Road Cum Embankment on the bank of Hariya River
Proposals for over bridge		
37	At railway gate No. 1, near Sankar Mandir	Construction of over bridge
Proposals for any other Infrastructure		
38	1. Construction of Clock Tower at Kampur Sankar Mandir Tiniali 2. Construction of Public Toilets at different suitable places of Kampur Town. 3. Construction of Waiting sheds at different suitable places of Kampur Town 4. Installation of Solar lights at different suitable places of Kampur Master Plan Area.	
Proposals for Development of Cremation /Burial Ground		
39	Development of existing 10 Nos. of Cremation grounds situated at Kampur Town, Major ati, Parliguri, Ghilani, Tetelisara Gaon,Dakhinpat, Niz- Kampur and Bhalbhalia and development of 2 Nos. of Burial grounds situated at Kampur Town and Ghilani	

Proposals for Construction of Multi Level Car Parking System	
40	Construction of Multi Level Car Parking System at Police Station Rd. of W/No. VIII
Proposals for Fire Hydrants	
41	Installation of Fire Hydrants in the market area of Ward No. II, V, VIII
Proposal for Vending zones	
42	A Vending zone is proposed in the main bazar area of Kampur Town.

